

THE IRON AGE

New York, November 22, 1917

ESTABLISHED 1855

VOL. 100: No. 21

Concentrating for Real War Work

Bureau of Manufacturing Industries to Be Organized
—Non-essential Manufacturing Will Be Reduced,
but Action Will Not Be Taken with Ruthless Hand

FAR-REACHING plans for the concentration of the manufacturing resources of the entire country upon war work and the production of the necessities of life have been launched at Washington during the past week by the War Industries Board in conjunction with the Division of Imports of the War Trade Board, involving the drastic restriction or complete elimination of non-essential industries and the conversion of their facilities, where possible, to war work or work for the general public welfare. This project, foreshadowed some time ago when the Priority Officer of the War Industries Board cut off the supply of chrome steel from the manufacturers of pleasure automobiles, is one of the most comprehensive yet undertaken by the Government, and notwithstanding the announced policy to proceed with this work along conservative lines with a view to minimizing the disturbance of established industries, there can be no doubt the results in many cases will not only be revolutionary but disastrous. On the other hand, the concentration of every possible resource upon the giant task of winning the war will prove most helpful to those industries engaged in the manufacture of munitions, the building of ships and other lines of activity contributing substantially to the general welfare.

The first formal action looking to the perfecting of an organization to handle this important and delicate work was taken by the War Industries Board on Nov. 16 when it was decided to create a Bureau of Manufacturing Resources, the head of which will be a direct subordinate of the Board and at all times in touch with that body. Simultaneously the War Trade Board announced the appointment of Clarence M. Woolley as a representative of the Department of Commerce on the board charged with the special duty of supervising all imports of foreign merchandise with a view to restricting the use of shipping and other transportation facilities to war materials and other necessities. The work of the Bureau of Manufacturing Resources and the Division of Imports of the War Trade Board will be closely co-ordinated and will be under the general supervision of the Council of National Defense.

Classifying All Industries

The first step to be taken by the Bureau of Manufacturing Resources will be the classification of all the industries of the United States by output with respect to their usefulness in the conduct of the war. Essential industries will be grouped in the preferred class and will be entitled to receive the most favorable treatment at the hands of the Government. The non-essential industries will be subdivided and classified according to the demands they make upon the resources of

the country with respect to supplies of raw material, labor requirements and transportation. Lines of manufacture like the production of pleasure automobiles, which use large quantities of special alloy steel and fuel, employ great numbers of highly skilled mechanics and require a large amount of rolling stock to move their products, will be marked down for early attention. Next in order will come industries which, while not utilizing material that could be turned to war purposes, nevertheless employ much skilled labor and have heavy requirements in the way of transportation facilities. Other classes using less fuel, labor and freight facilities will follow in order, while at the foot of the list will be many small enterprises producing non-essentials or pure luxuries, but the requirements of which in the form of fuel, materials, labor, transportation, etc., are negligible.

Methods of Procedure

When the classification of non-essential industries is completed, it will be reviewed from the point of view of the practicability of changing over existing establishments for the production either of war material or of so-called necessities of life. As a simple illustration of what it is hoped to accomplish in this direction through the work of the Bureau, the plants of the manufacturers of pleasure automobiles and the manufacturing jewelers may be cited. Many automobile factories have already been given large contracts for the production of Liberty motors, airplanes and their various adjuncts and shells of small calibers. The wide distribution of these plants and their highly specialized organizations will undoubtedly make it practicable for the Government to secure enormous quantities of necessary material therefrom, while at the same time keeping the majority of these concerns going on a reasonably profitable basis. Certain manufacturing jewelers, anticipating that they will ultimately be classified as producers of non-essentials, have already offered suggestions to the War Industries Board concerning the utilization of their plants in the manufacture of fuses and brass parts of small caliber shells. It is obvious, of course, that there are many industries destined to be included in the category of non-essentials that cannot be made to contribute to the Nation's stock of war material, but it is probable that there are very few that cannot be changed over for the production of useful material of some kind and thus made to supplement the output of existing industries now heavily taxed by the current demand.

In this connection the Bureau of Manufacturing Resources will adopt for its guidance the broad principle that consumption and production should be bal-

anced in all industries. This will be borne in mind in all the attempts made to change over the plants of non-essential industries for the production of useful material. Every effort will be made in directing such remodeling to increase the production only of goods in which there is a shortage; otherwise the efforts of the Bureau would merely result in the piling up of surplus merchandise of no more immediate value than mere luxuries.

No Cause for Alarm

Intimations concerning the plans of the War Industries Board with respect to non-essential industries, which have appeared in the daily press, have started a flood of letters and telegrams to Washington from owners and managers of plants engaged in producing articles likely to come under the ban, anxiously inquiring concerning the purposes of the Bureau of Manufacturing Resources, and in many of these communications there is an earnest protest against the publication by Government authority of any category of non-essentials. It is pointed out that the publication of such a list would spell the ruin of many establishments. Credit would be withdrawn, organizations of experts and of skilled labor would go to pieces overnight, raw material supplies would be cut off and dealers and consumers would probably turn their attention to other goods. It can be stated on the authority of Director Gifford of the Council of National Defense that the Government has at no time contemplated the publication of any list of non-essential industries and that while the classification of the Bureau of Manufacturing Resources must necessarily be made in a systematic manner, its conclusions will be treated as strictly confidential. While the work will necessarily be of the most delicate character, it is the hope of the officials who are planning the organization of the Bureau to keep its deliberations as to any particular industry entirely secret at least until plans have been perfected for changing over plants for the manufacture of other profitable products.

Many inquiries have also been received here as to whether hearings will be granted to the representatives of industries likely to be included in the non-essential class. Plans for the work of the new Bureau have not progressed far enough to enable the officials to answer this question categorically, but it can be stated that it is the present intention of the officials to permit the representatives of such industries to present fully either orally or in writing all the facts concerning their material supply, fuel requirements, labor, transportation, use of product, etc., as may be necessary for a clear understanding of each separate problem. No hasty action will be taken, and as in nearly all cases a careful study will have to be made of each industry that it is proposed to divert to some other line of work, there will be little danger that hardship will result from hurried decisions or inconsiderate action.

Question of Authority

In some of the inquiries now reaching Washington, it is contended that the Government is without specific authority to make the proposed classification of industries and the officials are requested to point out the particular statute under which the Bureau of Manufacturing Resources is to be organized. A high official in commenting upon these inquiries pointed out to the correspondent of THE IRON AGE the fallacy upon which they are based.

"It is not a question," said he, "of statutory authority to organize the proposed bureau and if the manufacturers who are raising this issue understood the purpose of the bureau, they would not urge the contention that there is no law for its creation. As

a matter of fact, the chief function of the bureau will be to provide relief for such industries as are classified as non-essential and the entire staff of the bureau will be devoted to reducing to a minimum the hardships incident to the necessary concentration of the country's resources upon the vigorous prosecution of the war.

"No one at all familiar with recent legislation will be apt to raise any question as to the power of the Government to take steps discriminating against industries of no value for war purposes and which do not contribute greatly to the public welfare. The Lever food, feed and fuel bill gives the President, through his delegated agents, full authority to regulate the distribution of coal, coke, petroleum, etc., and the Fuel Administrator can thus cut off absolutely supplies from non-essential manufacturing plants. The Priority Officer of the War Industries Board is also clothed with full authority to embargo any material in his discretion and to deny the use of transportation facilities to producers whose output may be included in the non-essential class. The Government's absolute control of transportation alone gives it all the power necessary to carry out the plans of the Bureau of Manufacturing Resources and it is doubtful if it will be necessary to ask Congress for supplemental legislation of any kind. This does not mean that the power of the Government will be ruthlessly exercised, for every effort will be made to avoid hardship."

In this connection the attention of Judge Lovett, Priority Officer of the War Industries Board and its temporary chairman, was called to a widely published statement that the Council of National Defense will speedily formulate a list of non-essential industries and that the first step to be taken by the Government will be the denial of transportation privileges to all products included in the category. Judge Lovett promptly discredited these publications.

Transportation of Non-Essentials

"While the situation may change," said he, "I am not at this time contemplating any further action with respect to transportation of non-essentials. Priority Order No. 2 with regard to open top cars went as far as it seemed wise to go in dealing with that problem by restricting the transportation of non-essentials. Conditions, however, will be constantly observed. Whether the coal shortage requires restriction of the coal supply of non-essential industries is a question for the Fuel Administrator, Dr. Garfield, to determine; and if any priority orders become necessary in the furtherance of his policy in that regard, they will be made only upon his request.

"As to the War Industries Board, apart from my action under the Priority Act with respect to transportation, I may say that the industries of the country would seem to be justified in assuming from the action of the board in the matter of copper and steel prices and its record generally to date, that it is the desire and policy of the board carefully and liberally to conserve the interest and welfare of industries. I feel safe in saying that the board will take no action designed to eliminate any non-essential industry without reasonable notice and an opportunity to be heard."

Dr. Garfield's Statement

Supplementing Judge Lovett's statement, Dr. Garfield, the Fuel Administrator, says that if voluntary economy on the part of industrial and domestic consumers, added to the increased coal production of 1917, which will exceed 1916 by more than 50,000,000 tons, "does not provide fuel enough for the war and to keep the people warm, there will come a time when some limitation will have to be imposed upon manufacturers of non-war products."

"In such an event," he continues, "the business world may feel sure that all the bearings of such limitations will be given thorough consideration and that the necessary coal will be obtained with the least possible interference with industry. Arbitrary limitation is a last resort and to be avoided, if possible. In many cases, industrial concerns have already begun a voluntary curtailment of their use of coal. Such efforts will receive the fullest support and encouragement of the fuel administration, including technical advice on the use of fuel. The important point for every one to remember is that if coal is now consumed in the old 'peace-time' way, the supply will fall 50,000,000 tons short of necessary requirements in spite of the large increase in production.

"As I have stated before, the fuel administration is determined that sufficient coal for the war, for public utilities and for domestic consumers shall be provided. The way to prevent those losses incident upon limitation of industry is for every consumer of coal to cut off unnecessary consumption with an iron hand, and to start on this intensive course of conservation without a moment's delay."

Electrical Advertising

Action collateral with that of the proposed bureau of manufacturing resources was taken during the past week by Fuel Administrator Garfield with respect to electrical advertising signs. This order provides that hereafter "no corporation, association, partnership, or person engaged in whole or in part, in the business of furnishing electricity for illuminating or power purposes, and no corporation, association, partnership, or person maintaining a plant for the purpose of supplying for its own use electricity for illuminating or power purposes, shall use any coal for the purpose of generating, producing, or supplying electricity, or supply or use electricity generated or produced, in whole or in part, by the consumption of coal, for the purpose of providing, maintaining, lighting, or operating, before the hour of 7.45 p. m., or after the hour of 11 p. m., electrically illuminated or display advertisements, notices, announcements, signs, designation of the location of an office or place of business or of the nature of any business, electric searchlights, or (external) illumination or ornamentation of any building, except in the interior of buildings, and except as in special cases hereinafter further or otherwise provided or limited." The limitations referred to exempt electric signs affixed to the street fronts of buildings over the street entrances thereof or over the street entrances of stores, shops, or other places of business therein, or extending therefrom over the sidewalks, for the purpose of announcing the name or business of a retail shop or store, or the name and location of a theater or other place of amusement or of a hall or other place of public assembly, together with the name of the play or other entertainment given therein, or of the purpose of any public assembly to be held therein. It is also provided that the order in question shall not apply to "porch lights upon houses or hotels or at the entrances to buildings occupied or open for ingress or egress during the nighttime, or to lights upon private driveways, walks, or in the grounds of any hotel, manufacturing establishment, or residence, or upon the platform of railroad stations, approaches thereto, or in railroad yards or grounds, or to lights to mark the location of fire escapes or exits; or to lights for any similar purposes when authorized by any State fuel administrator of the State within which such lights are located."

Foreign Sources of Supply

Although the work of the Division of Imports of the War Trade Board with reference to the elimination of non-essential industries will affect only those lines of

enterprises in which foreign materials are employed in whole or in part, it will be of vital importance to those dependent in any way upon foreign sources of supply. Within a comparatively short time it is probable that every kind of foreign merchandise will require an import license to permit it to be brought into this country, just as at the present time export licenses are required to send abroad certain kinds of iron and steel and other commodities. Mr. Woolley, who will have charge of this work, has had a broad business training, having served for many years as president of the American Radiator Co. and can be relied upon to take an experienced business man's view of all the problems he is called upon to consider. In addition to working with the Bureau of Manufacturing Resources, Mr. Woolley will be in close touch with the Shipping Board and it is expected that a system will be worked out under which the leading steamship lines of the world entering American ports will require prospective shippers to produce licenses for the entrance of their goods into the United States before receiving them for transportation. The Government has ample authority to enforce such an arrangement, as it can require steamship companies to return to the port of shipment all goods excluded from the United States in the same manner as is now required with respect to undesirable immigrants. Such a regulation would, of course, have a salutary effect upon steamship lines that otherwise might be disposed to ignore the requirements of the War Trade Board.

W. L. C.

Marked Betterment in Fabricated Business

A marked increase in the amount of business which was done in October is shown by the records of the Bridge Builders and Structural Society, as collected by George E. Gifford, 50 Church St., New York, its secretary. The percentage figure of the capacity of the bridge and structural shops of the country put under contract in October was 61.5, which is also the average of the first five months of this year. The volume corresponds to about 111,000 tons. Thus over twice as much business was done in October as in September, when the total reported was about 52,000 tons, but it is believed that October figures include some Government work not reported in September. To a very large extent the business has represented Government demands or demands for shipbuilding purposes growing out of the war conditions.

So far this year about 943,000 tons of bridge and building work have been closed. For the totals of 1913 and 1914 to be reached it will only be necessary for contracting to be done at the rate of 38 per cent for November and December. The amount of business done in 1915 and 1916, however, was nearly 50 per cent more than in the years 1913 or 1914.

Trumbull Steel Co. Additions

The Trumbull Steel Co., Warren, Ohio, expects to place its open-hearth plant in operation about Jan. 15. Five 100-ton furnaces are being built, the first of which will be ready to start about that date. Two additional furnaces will be built later. The mill equipment, which will not be ready for operation until some time after the open-hearth furnaces are started, will include a 36-in., two high blooming mill supplied by the United Engineering & Foundry Co., and six stands of 18-in. Morgan continuous sheet bar and billet mill. A 21-in. stand will be installed later. Practically the entire plant will be electrically driven. The company plans to place its hot strip mill in operation about Dec. 15.

L. E. Fisher, vice-president and chief engineer of the St. Louis Coke & Chemical Co., a subsidiary of the American Coke & Chemical Co., Chicago, has announced that the site in East St. Louis, Ill., for the plant recently announced as planned, has been selected and will probably be formally transferred within the next two weeks.

The Ore Bridge Spans 147 Ft., Has a Length of 207 Ft., and Is Equipped with a 10-Ton Brownhoist Ore Bucket. Ore is unloaded between the tracks just outside the concrete retaining wall at the bins. This wall supports the rail on which the shear leg of the bridge travels



Yard and Bins for Large Ore Storage

Plant at Republic Iron & Steel Co.'s New Blast Furnace Facilitates Handling Ore, Coke and Limestone—Car Unloading Trestle at Bins

EFFICIENT utilization of limited ore-storage space adjoining the new Haselton blast furnace, recently put in operation by the Republic Iron & Steel Co., Youngstown, Ohio, and facility in the handling of ore, coke and limestone at the skip hoist were features sought in the design and construction of the bins and ore-yard plant supplying this furnace. Reinforced concrete was used extensively in the superstructure in place of steel due to scarcity of the latter and the side plates of the bins were increased in thickness and used as suspension members, thereby making unnecessary the use of independent bolt supports.

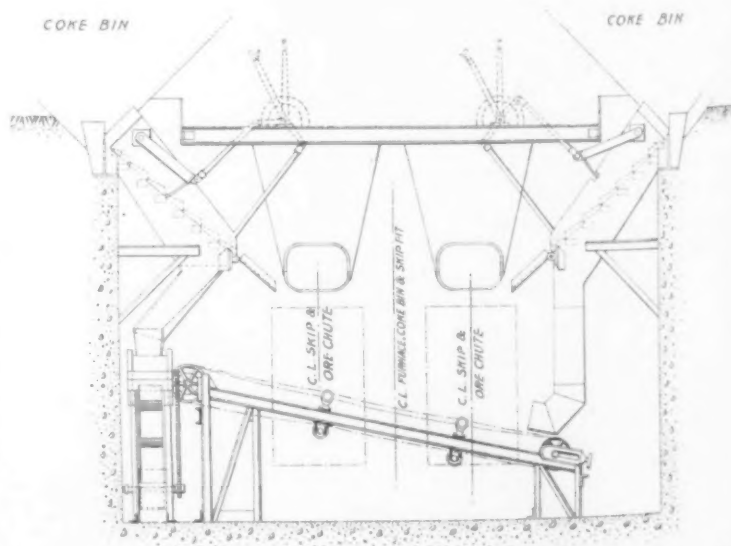
Nineteen bins were erected; 15 for ore, limestone and miscellaneous materials, one double bin for coke, one for scrap iron, and two to provide coal to yard locomotives. This part of the plant, together with a three-track trestle approximately 337 ft. long, one ore transfer car and two scale cars, was furnished by Arthur G. McKee & Co., contracting engineers, Cleveland. The transfer and scale cars are the McKee patented standard types and are electrically driven. The capacity of the scale car is 120 cu. ft. and that of the transfer car 50 tons.

Space for the ore yard was limited on one side by the trestle at the furnace and on the other side by adjoining Pennsylvania tracks. For this reason a retaining wall was built the whole length of the trestle system. This wall is heavily reinforced, and at the bottom has a large spread foot. Another retaining wall was built along the Pennsylvania Railroad's right of way. Ore for the yard is dumped under the outside track of the trestle between the counterforts as illustrated and is handled by a grab bucket, being picked up just outside the outer rail and delivered by the bridge to the ore pile. It will be noted that the shear leg of

the ore bridge runs on top of the trestle just above the retaining wall.

One track of the trestle is over the coke, coal and scrap bins, the second track is over the ore and stone bins, and the third track, the trestle of which was extended approximately 271 ft., is parallel to the first two, but supported on the counterforts of the ore-yard retaining wall and arranged for unloading ore from railroad cars. The tracks are all of standard gage. All bents are spaced 16-ft. 1-in. centers, and all track stringers are made of Bethlehem 26-in. I-beams, 90 lb. per foot. These stringers are provided with suitable cross-bracing made of 7/16-in. plate, 22 in. wide, and 3 x 3 x 7/16-in. flange angles. They support 85-lb. American standard rails, secured by means of rolled steel clips.

An ore-bridge rail is secured to the top of the ore-yard retaining wall by means of ties, some of which extend a sufficient distance on each side of



Coke from the Double Bin Is Discharged Into the Skip Hoist Buckets Over Sets of Cascade Coke Screens. Breeze is transferred by the auxiliary conveyor and lifted by a main conveyor to a coke-breeze bin

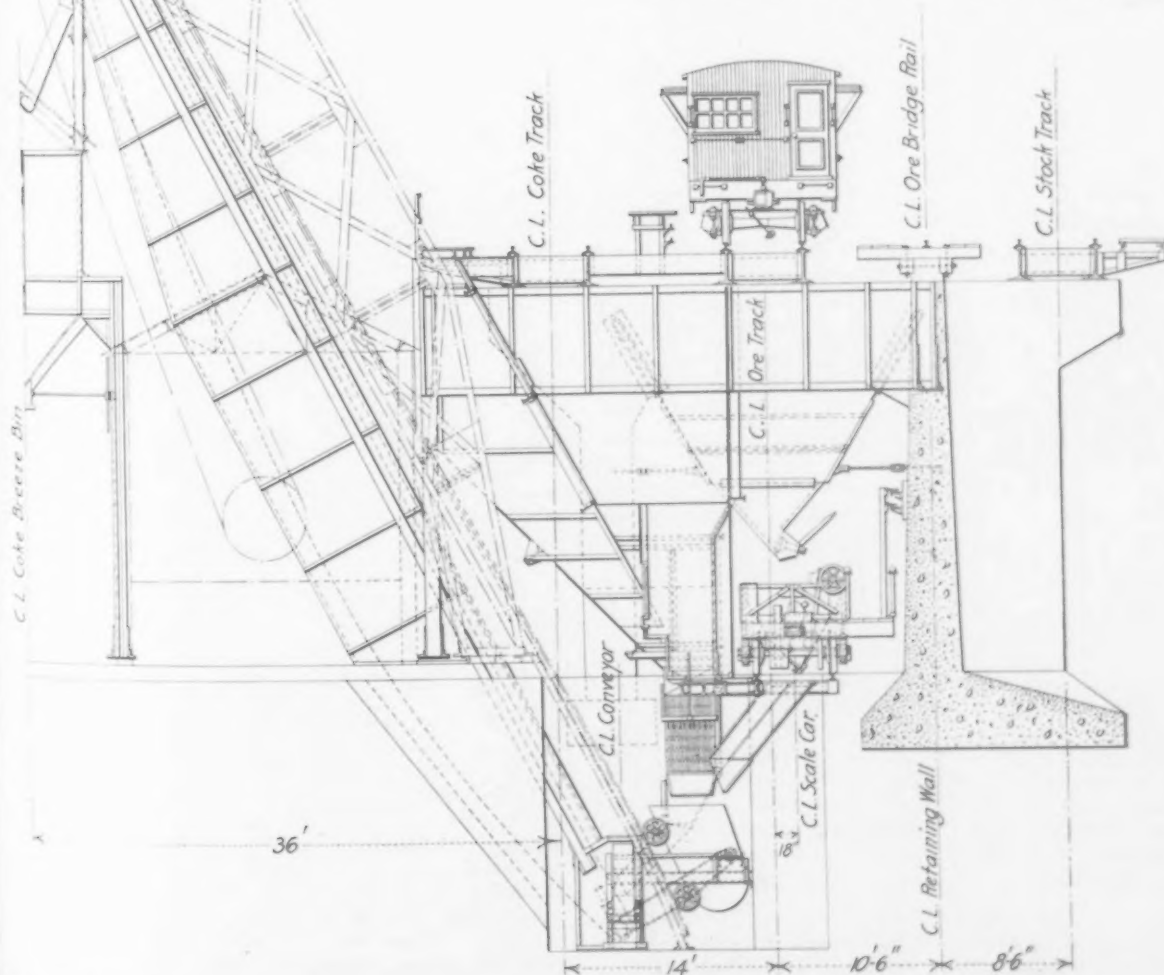
The Conspicuous Bay in the Center of the Illustration Contains the Scrap-Iron Bin. Adjoining this are the two locomotive coaling bins. The scrap bin is approximately 10 ft. long and has capacity for approximately 200 tons of scrap. Each coal bin has capacity for 40 tons of coal.



this track to form the supports for the walkways adjacent to this rail. A walkway was built on the outside of both the ore unloading track and the coke trestle, complete with hand-rail and intermediate bar, and another was built between the ore track and the coke track. This walkway is

somewhat higher than the railroad tracks and is to carry two transfer car conductors, consisting of 25-lb. rails extending the entire length of the three-track part of this trestle. All walkways have steel supports and 2-in. plank flooring.

The ore and limestone bins are shown in an accompanying reproduced photograph. These are supported by diagonal reinforced concrete girders built in connection with the reinforced concrete bents and are of 250-tons ore capacity at 150 lb. per cu. ft. There are also 15 bin bottoms of standard suspension-type construction with adjacent



The Trestle Supports the Coke and Ore Tracks and the Stock Track from Which Ore Is Unloaded. The method of Supporting the ore bins is shown, as is also the conveyor delivering coke breeze to the coke breeze bin.

hand-operated gates. Two ore bins on one side of and next to the coke bin are provided with partitions dividing them in two parts at right angles to the trestle, these partitions extending to the bottom of the track stringers. Over the ore bins are provided 15-in. 33-lb. channels, for the support of grids to prevent large pieces of ore from falling into the bins.

Opposite No. 5 blast furnace was erected one double coke bin of 300-ton capacity. This discharges over a set of McKee patented Cascade coke screens and chutes with gates for shutting off the flow of coke. The chutes deliver the coke directly to the skip cars in the skip pit. These coke bins are made of 5/16-in. steel plates throughout, except adjacent to the discharge openings of the bins, where they are reinforced by 3/8-in. wearing plates.

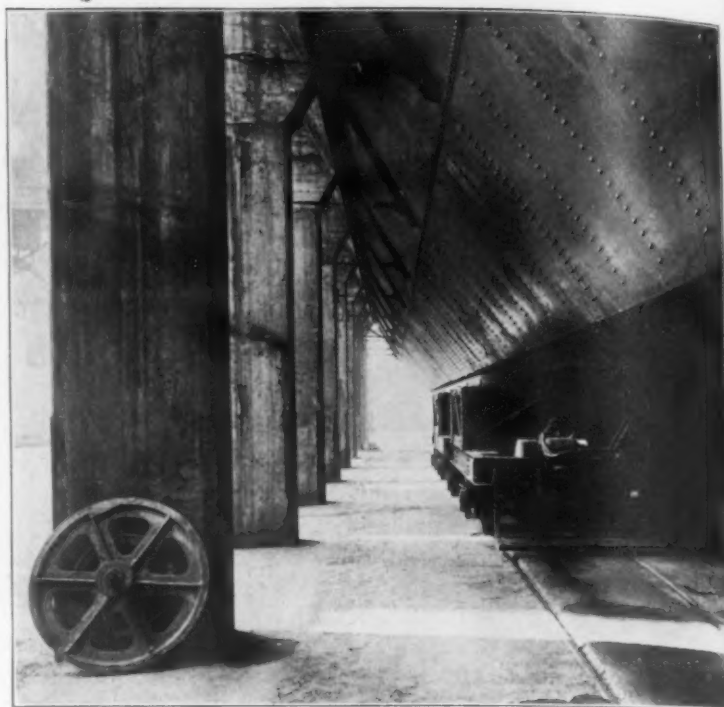
The coke breeze removed by the coke screens falls through chutes into coke breeze conveyors at the bottom of the skip pit. These conveyors deliver the breeze to an elevator, which, in turn, discharges its contents to a coke breeze bin situated over a track adjacent to the cast house wall. The coke breeze elevator is constructed of Leviathan belting and malleable buckets, and is provided with suitable motors and starting boxes. The casing of the elevator is constructed of plates and angles and is designed to admit of the customary sag of the return side of the elevator belt.

There is in the fifth bay of the trestle, adjoining the first ore bin, one scrap-iron bin, designed to receive scrap from cars placed on the coke track. This bin is about 10 ft. long and has a capacity of approximately 200 tons of scrap iron, figured at 350 lb. per cu. ft. This scrap bin is shown in an illustration. It has its bottom plate protected by 75-ft. rails placed on 5-in. centers and running in the direction of the slope of the bottom of the bin. Two locomotive coaling bins are located opposite the two ore bins adjoining the scrap bin. These bins are made of 5/16-in. plates and have a capacity of approximately 40 tons each. To prevent dropping of materials from the ore track on the operator of the scale car when opposite the coke bin a 1/4-in. deck plate was erected under the track stringers for the entire length of the coke bin and extending from the side of the coke bin to the retaining wall. There is also a similar deck plate over the scale-car track opposite the scrap-iron bin.

Manganese Imports Fall Off in September

Manganese ore imports in September were only 36,755 gross tons, or next to the lowest for any month so far this year. April with only 27,023 tons was the minimum. To Oct. 1, 1917, however, the total of 494,633 tons exceeds any previous record and compares with 469,222 tons to Oct. 1, 1916. The monthly average to Oct. 1, 1917, is 54,959 tons per month, which means a production of about 20,000 tons of 80 per cent ferromanganese each month.

The recently remodeled furnace of the Southeastern Iron Co. at Goshen, Va., which went into blast Oct. 8, began the manufacture of ferromanganese Nov. 9. Its production will be about 75 tons a day.



Fifteen Ore Bins, Each of 250 Tons Capacity, Are Supported by Diagonal Reinforced Concrete Girders Spanning the Reinforced Concrete Bents

Court Decisions on Labor Questions

An unusual array of important decisions is presented by the Bureau of Labor Statistics of the U. S. Department of Labor in its annual compilation of court decisions on labor questions, just published as Bulletin No. 224. A number of the decisions of the Supreme Court of the United States, handed down since December, 1916, are included in this bulletin, but for the most part the decisions were made in the calendar year 1916.

Most notable among the Supreme Court decisions, on account of the circumstances attending the enactment of the law construed by it, is the decision sustaining the constitutionality of the Adamson 8-hour law for trainmen in interstate commerce, and declaring at the same time the right of Congress to compulsorily arbitrate disputes between the railroads and their employees for the benefit of the public.

The first broad decisions ultimately deciding the constitutionality of workmen's compensation laws are also noted in this volume. Another important decision by the Supreme Court was that sustaining the Oregon 10-hour day for factory employees without regard to sex or age—a marked reversal of position from the action of the same court in 1905 in holding the 10-hour law of New York applicable to bakeries unconstitutional.

Of hardly less interest than these decisions of the Supreme Court is the action of the court of last resort of the State of Massachusetts in declaring unconstitutional an act of that State which undertook to limit the issue of injunctions in labor disputes, declaring that injunctions should issue only when property rights are affected, and that labor is not property. The court took the view that this attitude excludes from the protection of the law those who had no other property than their right to work, and held that such a deprivation could not be effected by statute.

The Commonwealth Steel Co., Granite City, Ill., and St. Louis, has announced, effective Dec. 1, an increase of wages amounting to 5 per cent. Another increase will be given March 1. This has been decided upon in lieu of a special fund for pensions which will probably be created later. After Nov. 30 employees getting 34c. per hour or less will be increased 1 1/2c. per hour. From 35c. to 49c. per hour, the increase will be 2c. per hour and above 50c. per hour the increase will be 2 1/2c. per hour. Piece work employees will be given a straight 5 per cent increase.

BRAZILIAN IRON ORE

Recent Action Against Germans Improves the Prospect

Financial interests which have been connected with the plans for the exploitation of the extensive and high-grade iron ore deposits in the central part of Brazil, and at the present time are engaged in continuing investigations and concluding negotiations, are watching with a good deal of interest the developments of the war situation in Brazil.

The availability and importance of these Brazilian deposits were first recognized by Dr. C. R. Van Hise, president of the University of Wisconsin, about six years ago, at the time of the Copenhagen meeting of the International Geological Congress. Dr. Van Hise was at that time engaged in editing the Iron Resources of North and South America, for the main thesis of the convention, The Iron Ore Reserves of the World. He was so impressed with the data relating to the Brazilian deposits that he personally assumed the expense of sending an associate to Brazil to investigate and confirm the facts set forth in the reports, official and otherwise.

As a result of these activities, some large British financial interests secured extensive holdings in Brazil, also a group including some very important British and American interests acquired in the field approximately 5,000,000,000 tons of iron ore and undertook a general reconnaissance of the district. At the same time another American-British syndicate, represented by John Hays Hammond, purchased about 2,000,000,000 tons of ore, and various other syndicates, including a French syndicate and a German-Brazilian syndicate, obtained control of large deposits. The aggregate reserves secured by these syndicates are enormous, but by no means include the total available ore in the district.

Negotiations for the financing of one of these projects were definitely under way when the European war broke out. Another negotiation, in which German concerns were supposed to be actively interested, was also planned. An investigation of transportation conditions was made under the direction of James J. Hill, the railroad authority, and Sir Ernest Casell, of London, and a general report was made. Freight rates according to this report could be made which would enable the high grade ore to be shipped to England profitably. It was proposed to extend the railroad which followed the course of the Doce River from Victoria port to the iron district and establish an ore steamship line to England. The capital involved in this transportation scheme was placed at \$50,000,000. The port of Victoria lies north of Rio de Janeiro. Another plan contemplated the construction of railroad lines to either Rio de Janeiro or some adjacent port, the distance being about the same as to Victoria, but the grade not so good. The advantage, however, of the Rio Janeiro terminus was the distribution of return cargoes of coal and other products.

All of these negotiations were suspended at the beginning of the war, but the geologic investigations of the district have been continued and in general the matter is being held in hand. Negotiations have been continued with the Brazilian Government and with the State of Minas Geraes, to insure the minimum export taxes and to secure the co-operation of these governments in the exploitation of the iron. One party in the Brazilian Government is very much in favor of having iron smelted in Brazil, but this is not considered practical on account of lack of fuel. It is probable that an operation on a small scale might be advisable, particularly if a British-Brazilian or American-Brazilian steamship service were created which would provide delivery of coal in Brazil at a low figure. This would probably result in a steel and iron industry for local needs and to supply some of the other South American markets.

The Brazilian governmental and financial interests are looking toward electrical smelting of iron ore and are giving this subject consideration at this time.

The activity of certain German interests in the district, in earlier negotiations, was a factor in the situation which delayed the realization of the project. The recent action of the Brazilian Government in canceling the German-owned concessions and confiscating the German property generally throughout the Republic, will probably clear the situation. At any rate, British-American projects are more likely to be looked upon favorably by the Brazilian Government now than before the war.

This Brazilian ore, a specular hematite, runs from 68 per cent to 70 per cent in iron and low in phosphorus, and billions of tons can be mined above the surface. The deposits lie on a plateau, 3000 to 5000 ft. high, in a district which is healthful and on which there is abundant water power and favorable labor conditions.

The Brazilian manganese deposits lie to the south of the iron district generally, and realization of these deposits can be carried on extensively with the establishing of iron operations.

Pittsburgh-Cleveland Electrical Engineers to Meet in Canton

A joint meeting of the Pittsburgh and the Cleveland district sections of the Association of Iron and Steel Electrical Engineers will be held at the Hotel Courtlandt, Canton, Ohio, on Saturday, Nov. 24. While at Canton, the engineers will make a trip to the plant of the United Alloy Steel Corporation in that city. This plant has a 12,000-hp. reversing motor, driving a plate mill. The plant also contains a 60-cycle 4200-hp. motor having a frame of over 27-ft. in diameter, standing over 17-ft. above the floor. Its full-load speed is 93 r.p.m., and its maximum rated torque is approximately equivalent to that of 12,000-hp. at synchronous speed. The 1100 and 800-hp. adjustable-speed alternating-current sets, installed in 1913 on the company's merchant mills, were the first adjustable-speed alternating-current motor equipments installed in this country. Also the company's Lamberton mill is an interesting application. It is 2-high with the rolls moving from the upper to the lower position and vice versa, eliminating the necessity of tilting and lifting tables that would be necessary in a 3-high mill, and at the same time using a motor rotating in one direction only. This is the only mill of this type in this country. The plant also contains a 15-ton, 60-cycle Heroult electric furnace.

The delegates will also go to Massillon, five miles west of Canton, to inspect the steel plant of the Massillon Steel Co. This was the first steel plant to carry out every mechanical operation by electricity. It has nine 50-ton open-hearth furnaces, a 34-in. reversing blooming mill, and a 28-in. bar mill. The reversing mill is equipped with an 8000-hp. motor. This is the first reversing motor installed on a blooming mill in this country.

In the evening a paper on "Central Station Power" will be read by W. M. Hornlein, and another paper entitled "Electric Furnaces," by J. G. Donovan. Pittsburgh delegates will leave that city from the Pennsylvania station on Saturday morning at 8 o'clock.

On Wednesday, Nov. 7, the main building of the plant of the American Sintering Co., at Youngstown, Ohio, was destroyed by fire caused by an explosion, the loss being estimated at \$30,000. The plant was treating about 10,000 tons monthly of blast furnace ore dust. The company has contracted with the Stone & Webster Engineering Corporation for the rebuilding of its plant, is employing large forces of men clearing away the ruins, and expects to resume operations again early in December.

The Great Northern Railway Co., F. A. Bushnell purchasing agent, St. Paul, Minn., is in the market for ore spouts, pocket doors, hoisting machines, shafting, bearings, etc., for an ore dock of 160 pockets at Allouez, Wis.

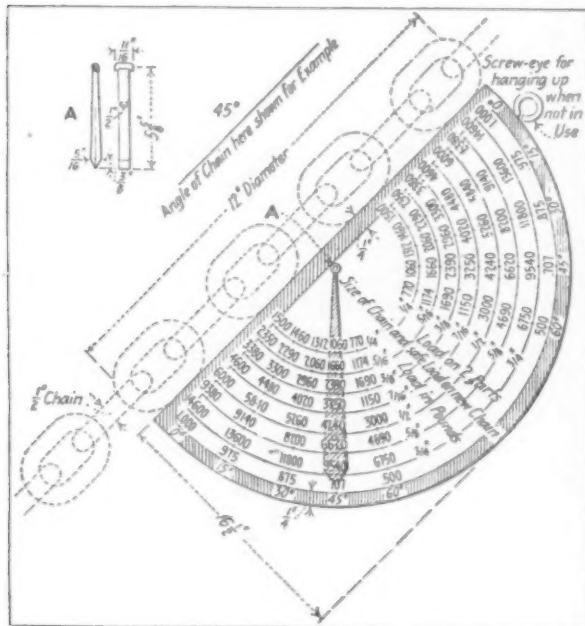
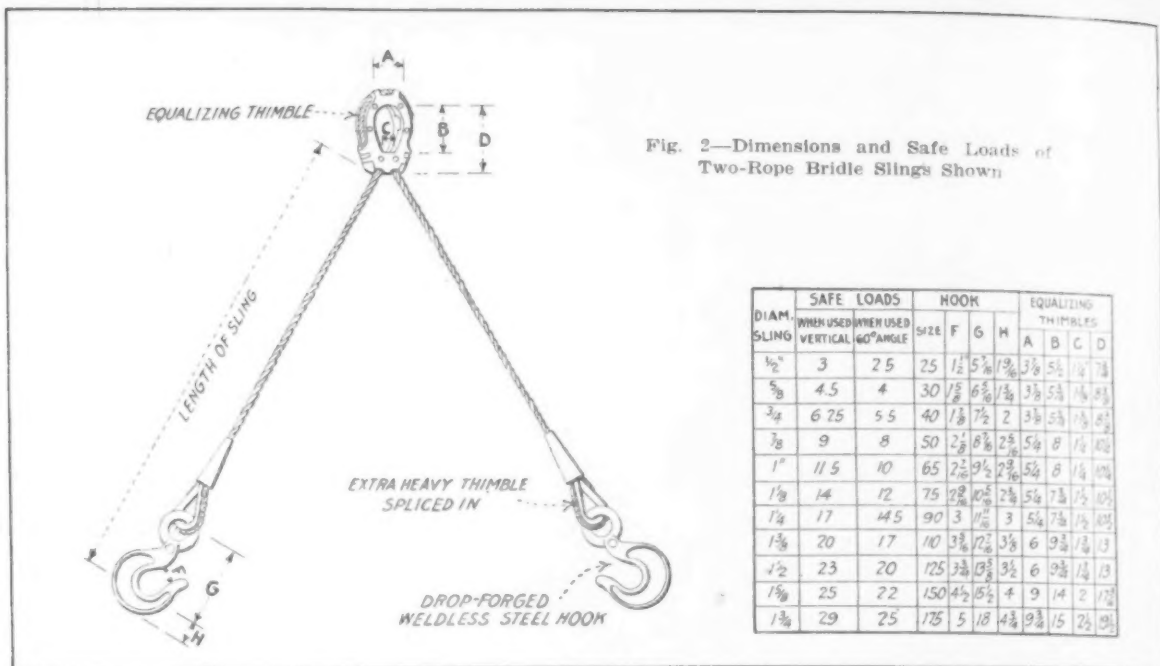


Fig. 1—Safe-Load Gage for Chain and Rope Slings

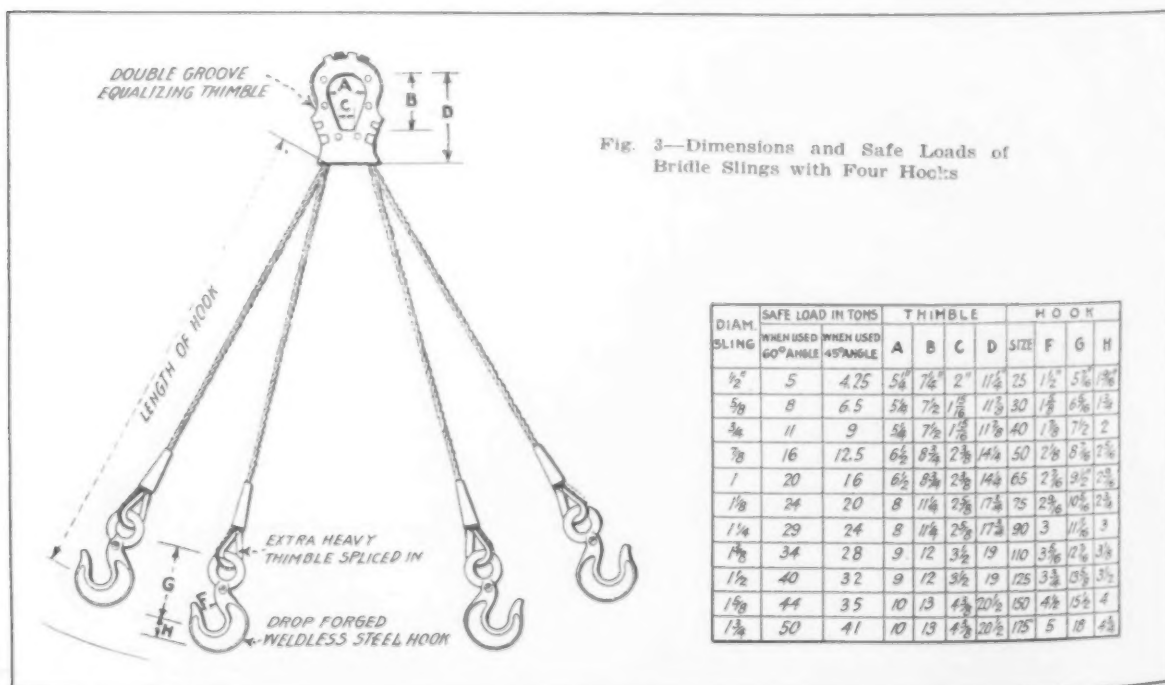
Safe Loads of Crane Chains and Slings

In a paper devoted to the solution of foundry transportation and conveying problems, read by Robert E. Newcomb, of the Deane Works, Worthington Pump & Machinery Corporation, Holyoke, Mass., at the convention of the American Foundrymen's Association, Boston, Sept. 28, 1917, notes were presented on methods of improving crane service. Among other things attention was called to the importance of regular inspection of cranes, chains and cables. The chart, Fig. 4, was presented as illustrating the practice of the Deane Works in this respect. Sling chains of suitable strength should always be used and the author called attention to several methods of insuring this practice.

The Safe-load gage, Fig. 1, devised by F. W. Salmon, is one of the devices recommended in the paper. The gage is a frame of light seasoned wood, about 1 ft. long and 3/4 in. thick. The use of the gage is shown clearly in the illustration and no further explanation is necessary. At the Deane Works each sling is marked with its capacity.

The data on safe loads of steel rope slings given by the author were contributed by John A. Roebeling's Sons Co. Figs. 2, 3 and 5, respectively, show the conditions under which the tables are to be used.

A point is made that sometimes a frequent and just



REAL PROBLEM IS LABOR

Judge Gary Says Steel Mills Will Do Their Part in the War

"Yes, we shall have a merchant marine," said Judge E. H. Gary in an interview published in the *New York Tribune* Nov. 19, as reported by Theo. M. Knappen. Then he went on to tell about the two new shipbuilding companies the Corporation is starting, the Federal, which is now building its plant on the Hackensack Meadows, and the unnamed corporation, which will build ships on Mobile Bay, where there has been acquired a great tract of land. The latter is an offshoot of the Tennessee Coal, Iron & Railroad Co., which is erecting a new plate mill at Birmingham, chiefly for the purpose of meeting the requirements of the Mobile yards for shipbuilding material. Quite independently of the plans of the United States Shipping Board, the Steel Corporation had decided to build 50 ships, varying in size from 9600 tons up to 18,000 tons.

Is it possible for the corporation to engage in shipbuilding on a large scale itself and not interfere with the demands made upon it for steel by the innumerable other yards?" asked Mr. Knappen.

"We shall take care of all the requirements of the other builders without delay," was the answer. "The steel mills of America are equal to the task of building 6,000,000 tons of shipping in a year.

"The real problem in that connection is that of labor. The labor outlook is precarious. Considering the small amount of tonnage American yards have been putting out, it seems almost impossible to build 6,000,000 tons next year. But I have great faith in Chairman Hurley of the Shipping Board. He is getting a great executive staff around him. Charles Piez, whom he has summoned from Chicago, to become vice-president of the board, is a great executive, energetic, competent and successful, and will be of great assistance to Mr. Hurley. I am not personally acquainted with Mr. Heyworth, who has been put in charge of hastening the construction of wooden ships, but I hear very favorable reports of him.

"We are continuously adding to our plants and equipment, not only to promote shipbuilding, but to contribute in many ways to the successful prosecution of the war. The new Liberty plate mill at Homestead was rushed to completion in six months, and is now turning out the plates for the ships the Federal Shipbuilding Corporation is building. It has a capacity of 150,000 tons a year.

"A short time ago Mr. Baruch came to me and said that the Government was greatly in need of increased forging capacity. This is a kind of work we had not been doing. We began work on forging plants the next day. We are greatly increasing our electric steel capacity, one plant being built at Gary and another at Carnegie.

"We are extending our structural steel capacity at Birmingham and are increasing our production at other places. Our production of coke is being greatly increased, not only for the coke, but also for such important by-products of great military value as benzol and toluol. To expedite the movement of our products we are building many freight cars. Some are being built for us, and we are erecting a car shop at Birmingham, where we are also putting up a fine new structural steel plant. We are doing things in every department.

"It may surprise the people to know that we are spending about \$12,000,000 a month for extensions, almost all for war purposes."

The Bureau of Yards and Docks, Washington, D. C., has awarded a contract for the construction of a new five-story machine shop at the Washington navy yard to cost \$936,000. The Industrial Engineering Co., 30 Church Street, New York, is the contractor. The department has also awarded a contract for the construction of a new six-story gun plant at the local yards to cost \$1,048,000. The structure will be reinforced concrete, 162 x 502 ft. The Warren, Moore Co., Philadelphia, is the building contractor.

FALSE REPORTS CIRCULATED

Reports Concerning Policy in Handling Alien Property Cause Trouble

WASHINGTON, Nov. 20.—Erroneous reports widely published during the past week concerning the plans of the alien property custodian for the execution of the trading with the enemy act have caused ill-founded alarm and have resulted in many unnecessary transfers of property, the cancellation of employment contracts, and the withdrawal of large amounts of capital from business and of money from the banks and postal savings funds. In a number of cases important manufacturing concerns have found their organizations demoralized and have been obliged to make comprehensive readjustments. Many of the published statements concerning this matter are so misleading as to induce the Committee on Public Information to suggest that they have originated in a deliberate plan to disturb and injure American business interests and not in a mere mistake.

The statement most calculated to mislead and cause uneasiness is to the effect that the fact as to whether anyone is an enemy or the ally of an enemy under the terms of the trading with the enemy act recently passed by Congress is determined by nationality or citizenship. This is not the fact. The principal test of enemy character under the act of Congress is one of residence or place of business or business connections, rather than nationality or citizenship. A subject of Germany or of any of Germany's allies residing in this country, even though he has made no declaration of his intention to become a citizen, is permitted to continue in trade and commerce and in the possession and control of his property while he remains in the United States and obeys its laws, and he is not regarded as an enemy nor placed in that category by the trading with the enemy act.

The broad purpose of Congress, as expressed in the trading with the enemy act, is, first, to preserve enemy-owned property situated in the United States from loss, and, secondly, to prevent every use of it which may be hostile or detrimental to the United States.

Commerce cannot, of course, be carried on between residents of countries that are at war. In the absence of a general law for the protection of money and property in the United States belonging to those who are under legal disability, there might without the special action of Congress have been very considerable property loss and deterioration. The property of every person under legal disability is in every civilized country protected by the appointment of trustees or conservators whose duty it is to administer and care for the property while the disability exists.

This is the duty of the alien-property custodian. He is charged by law with the duty of protecting the property of all owners who are under legal disability to act for themselves while a state of war continues.

The trading with the enemy act authorizes in certain cases a license to permit enemy-owned business to be carried on. Where such license is not applied for or is not granted, the alien-property custodian is directed to exercise in regard to enemy-owned property the well-defined authority of a common-law trustee. Thus the probable waste and loss of a great deal of valuable property and property rights which could not, while the war continues, be conserved by the enemy owner is avoided, and a trustee appointed and paid by the United States is charged with the duty of protecting and caring for such property until the end of the war. This is his function. There is, of course, no thought of the confiscation or dissipation of the property thus held in trust.

The Codd Tank & Specialty Co., 402 West Camden Street, Baltimore, Md., is desirous of getting in touch with a malleable iron foundry in a position to manufacture a pipe union. This has a bronze seat in the main portion of the union and another in the nut. In connection with the manufacture of the union machine shop facilities are required.

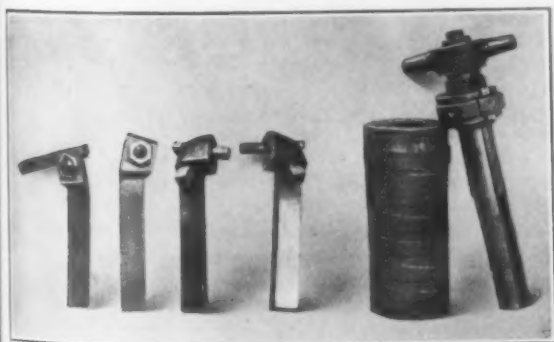
Tool Holders and Expanding Mandrel

Two tool holders and a swinging expansion mandrel, all of which are intended to facilitate the production of projectiles, have been designed by Herman P. Loudon, Sr., Lebanon, Pa. The holders are intended for diamond point and round nose tools respectively, and in the case of both marked increases in the rate of production are said to have been secured aside from the savings effected in the amount of tool steel required in comparison with large forged tools as well as enabling short pieces of scrap to be utilized.

The diamond point tool holder is intended for use on lathes, boring mills and planing or shaping machines, the holder being parallel on the bottom with the head rest. One end of the tool has an excessive lip for roughing, while the other is flatter and is designed for taking finishing cuts and cutting a standard V. It is possible to swivel the tool to the right or left, which enables right or left-hand threads to be cut with the same holder, and graduations are provided to facilitate setting. Another use of the tool is where a radius produced by a form attachment has to be followed. The round tool holder is particularly adapted to the turning out of various forms of projectiles and in one case the production of the 3.3-in. size was increased from 40 to 275 shells per day. Another advantage claimed for this arrangement of holders is that the shape selected for the class of work to be done can be kept true without grinding into the sides of the stock, which causes a waste of expensive steel as well as eliminating the expense of forging to shape and the dead stock required for a large forged tool.

The swinging expansion mandrel can be used for all classes of hollow work, although it was designed particularly for shell finishing. It can be arranged for either a friction or an automatic grip drive. In the former case the operator sets up the nut provided to pull up the jaws, while in the latter case the nut is left with the jaws a little slack, thus, it is pointed out, giving a mandrel that the mere turning of the work will make it grip fast while by turning the work in the opposite direction the piece can be readily released. The strain on the work as the cut is being taken is automatically compensated for by the rocking motion of the jaws.

The advantages claimed for the swinging arrangement are the elimination of energy consumed in lifting the mandrel in and out of the machine and the time required for loosening the tailstock and sliding it back whenever a shell has to be taken from the machine. This mandrel is provided with trunions with the mandrel telescoping through the driving medium. As the end of the mandrel is its own center, and rests in a funnel-shaped hardened bushing, it is pointed out that a larger friction surface is provided as well as effecting

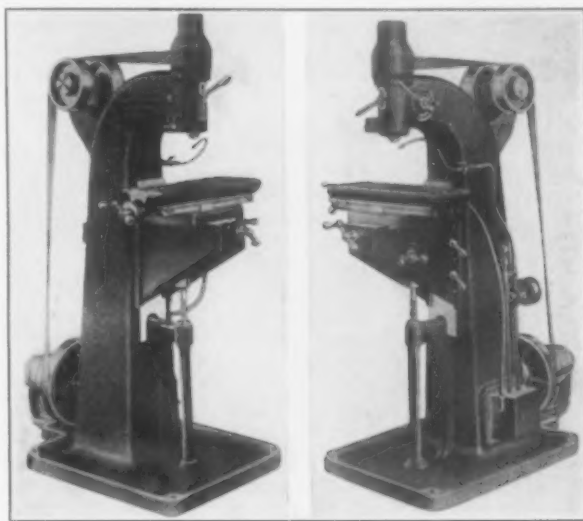


The Production of Shells Is Facilitated by Two Recently Developed Tool Holders and an Expanding Mandrel Which Can Be Swung Out of the Line of Centers for Ready Removal of the Work

the elimination of chatter and the saving in the cost of one center wearing and breaking off. The shells, it is emphasized, can be easily placed in and removed from the machine, thus eliminating sprained wrists due to constant lifting of the shells, while the production is also increased.

Light Vertical Spindle Milling Machine

High cutter speeds and ability to enable light profiling work to be handled characterize the new vertical spindle milling machine that has been brought out by the Taylor & Fenn Co., Hartford, Conn. The machine was designed for light work, cross and longitudinal movements of 6 and 11 in. respectively being



The Unit System of Construction Is Employed in a Recently Developed Light Vertical Spindle Milling Machine That Can Be Adapted for Profiling

provided, while the knee has a vertical adjustment of 9½ in. One of the uses to which the machine can be put is the manufacture of light interchangeable parts. The unit system of construction has been followed, the individual parts being assembled in groups. This arrangement is relied upon to give accuracy in conjunction with the finishing of the rotating parts by grinding and the scraping of the sliding surfaces.

The tool steel spindle, which has a hole 13/32 in. in diameter extending through it, is mounted in a steel sleeve in the head. A clamp ring and handle on the front of the head provides for the locking of the spindle and the sleeve in which it is mounted has a vertical movement of 2 in. controlled by a hand lever on the side of the head. Positive stops are provided for regulating the depth of the cut that is taken. The use of a four-step cone pulley and a friction countershaft having two forward speeds and one in the opposite direction provides for eight spindle speeds ranging from 246 to 4000 r.p.m.

The table, which measures 9 x 21 in. over all, has a working surface of 6 x 18 in. and is provided with ½-in. T-slots. The longitudinal and cross movements of the table are regulated by adjustable stops and by adjusting the knee and the spindle in its sleeve it is possible to secure a maximum distance of 11½ in. between the end of the spindle and the table top.

The machine is equipped with double row self-aligning ball bearings throughout, occupies a floor space of 30 x 50 in. and weighs 1050 lb. The equipment regularly furnished with the machine includes a gear-driven pump with tank and piping for supplying cutting lubricant to the work, an endless belt for transmitting power from the cone pulley to the spindle and a two-speed friction countershaft, the diameters of the pulleys being 8 and 10 in., respectively.

When changes now being made by the new interests in the Pittsburgh Rolls Corporation are complete the company will have a monthly capacity of 2000 tons of chilled and sand iron rolls. The plant at Pittsburgh is now running at the rate of 1300 tons monthly, as compared with an average for the 10 months ended Oct. 31 last of 1102 tons, and an average for 1916 of 1048 tons. The corporation is now working on orders for Italy, Japan and Australia, some of which will be delivered late this year and some early in 1918.

Foundrymen and Nation's Labor Problems

Feature of Meeting of National Founders' Association—The Farmer on Labor Questions—Enlarged Influence of Industrial Conference Board

AUTOCRACY of labor in interposing restrictions on production and in attempting to change existing employer-employee relations was easily the main subject of the twenty-first annual convention of the National Founders' Association held at the Hotel Astor, New York, Nov. 14 and 15. The views of the meeting took definite form in a telegram to the President of the United States, here reproduced. Contributions to the subject were made in addresses reported below, including one from a prominent farmer which shows a reversal of opinion on labor legislation by the agriculturists. The case of the railroads in meeting today's needs was explained by a nationally known railroad president and the broadening influence of the National Industrial Conference Board, the body organized to lay before Congress and the public facts concerning our industrial labor situation, was told by the chairman of the board's executive committee. A feature of the work of the National Founders' Association, brought out at the meeting, is the study being made to introduce mechanical appliances in the foundry, partly to overcome the labor shortage, but largely to bring about an engineering study of foundry problems not as yet much of a factor in the manufacturing side of castings production. The work has been in charge of the association's committee on foundry methods and for purposes of education on this topic a remarkable series of motion pictures were shown of actual work in several different foundries.

Three sessions were held as usual. On Wednesday morning were delivered the reports of officers. Leading points of President William H. Barr's address were given in last week's issue. Extracts of the reports of the commissioner and secretary are to be found in the subjoined account of the meeting. The sessions of Wednesday afternoon and Thursday morning were reserved for the special addresses and a banquet was held on Wednesday evening, at which motion pictures in color, many of them war scenes, were shown.

Labor Troubles in the War Period

George F. Monaghan, Detroit, general counsel for the association, delivered a stirring address. His subject was "Federal Control and Industrial Legislation." He referred to the enlarged authority which has been granted to the President in these war times, declaring that we are to-day living under a condition of State socialism with the President holding arbitrary power. He traced the growth of Federal control away from the old doctrine of State's rights. The first marked indication of the new order of things was the appointment in 1887 of the Interstate Commerce Commission with jurisdiction over the railroads of the country. Gradually, he said, the powers of this commission have broadened, and its history furnishes an example of increasing public sentiment in favor of centralization of authority in the Federal Government. He declared that Federal control of the drastic form now in effect was necessary to the successful prosecution of the war.

Referring to labor disputes during the war, Mr. Monaghan quoted the statement made some months ago by Samuel Gompers, president of the American Federation of Labor, that the question of closed or open shop would not be in controversy during the war. Mr. Monaghan said that the union men had not adhered to this declaration, however, but have found the war an opportunity to advance their own interests regardless of the effect upon the welfare of the country. He likened the union men who refuses to work with the man who throws down his gun and refuses to fight. The latter would be considered a traitor or a deserter and the laboring man who goes on strike, under present war conditions, should suffer the same penalty, in his opinion. All labor, he said, is as much a part of the war as

the man who fights in the trenches. He hoped that no backward step would be taken by the Government in insisting upon a full performance of the promise made by Mr. Gompers.

"If the Government can draft men to fight; if the Government can commandeer shops and factories; if it can deflect orders from one manufacturer to another for war needs; if it can suspend the ordinary peacetime safeguards of property—if it can do all these things, and it can and is doing them," said Mr. Monaghan, "it can force men to work." He suggested that the Government should say to these men, "Strike if you will, but as surely as you do you will be drafted for service in the trenches." He advocated a law that would force men to fight who refuse to work.

Mr. Monaghan said also that the business man is unpatriotic who will not work for the Government because his profits are not what they ought to be. He made a plea for unalloyed support of the Government in its war program, and said this was no time to indulge in idle criticism of the Administration, but if good ground for criticism exists an appeal should be made directly to Congress.

The 8-Hour Law in Government Work

W. H. Van Dervoort, president National Metal Trades Association, talked on labor troubles during the past year. He said that his association had had as many as 80 strikes at one time to contend with, and that there had been 200 strikes at the plants of members in the past three years. Without the help of the association, he said, 90 per cent of these strikes would have been won by the workmen. To-day, Mr. Van Dervoort said, fully 90 per cent of the capacity of members' factories are on Government work. He discussed the difficulties encountered because of the restrictions of the 8 hr. law, and said it was a problem how to handle the various factors that arise in connection with work under this law.

The piece-work question had proved a stumbling block, but had now been straightened out. Factories are privileged to keep running as many hours as the men are willing to work, but for all time over 8 hr. the employer must pay time and a half. If the same method of figuring were used on piece work it would require an endless amount of bookkeeping, so that compensation has been averaged in this way: If the men are receiving 10c. per piece on the basis of an 8-hr. day, and then their hours are increased to 10 the same result is arrived at, with less bookkeeping, by paying them a straight 11c. for each piece throughout the entire 10-hr. day. It has been decided that if an employee makes more in this way in 10 hr. than he would in 8 hr. on the hourly basis of pay the employer is within the law. If, however, the employee makes less on piece work than he would on the hourly basis of pay the employer must make up to him his loss.

Mr. Van Dervoort recommended that all employers on Government work keep an individual time record on each workman, as this record will settle disputes. It has been ruled that an employee cannot work 8½ hr. for five days in the week and 5 hr. on Saturday and receive only straight time for his labor. He must be paid for each half-hour overtime on five days of the week, and straight time for the 5 hr. on Saturday.

Agitators Masquerade as Government Agents

He cautioned foundrymen to be on guard against callers who represent themselves as agents of the Council of National Defense or other Government boards. He said that all such accredited agents have proper credentials and that men not possessing such credentials should not be admitted to offices or plants. He ended by telling how he had settled a threatened strike

at the plant of the Root & Van Dervoort Engineering Co., East Moline, Ill., by calling the men together in mass meeting after union men had been working for days to unionize the plant and call a strike. He told his employees plainly that any man who joined the union would be discharged; then he dwelt upon the fairness with which his company had treated the men and by force of argument persuaded them it was not to their interest to join the unions. The next day the labor agitators were driven off by the men themselves, and there has been no further talk of strike at the Root & Van Dervoort plant.

Walter E. Drew, counsel for the National Erectors' Association, followed Mr. Van Dervoort and explained the legal aspects of the Government 8-hr. law. He told in detail of a case in which a foundry was informed that a particular casting could be made without coming under the restrictions of the 8-hr. day. Subsequently organized labor had succeeded in having the Washington decision reversed. The foundry was regularly working on a 9-hr. day and the result was that the company, in spite of the parts being intended ultimately for Government work, was forced to refuse to contract. He emphasized particularly that labor union publications are playing up the special influence which the organization appears to have on at least certain

He felt that the National Founders' Association could well congratulate itself on the selection of Charles Piez for the vice-presidency of the shipping board. A vast amount of praise also was due both President Barr of the National Founders' Association and President Van Dervoort of the National Metal Trades Association, and he believed that considerable influence for betterment of employer-employee relations had already been exercised or exerted by the National Industrial Conference Board.

Farmers' Lesson in Industrial Relations

The address on the farmers' interest in industrial relations was made by O. L. Martin, former secretary of agriculture of Vermont and lecturer of the Vermont State Grange. It was in part as follows:

The farmer has always been sympathetic with the workers in their efforts for just treatment, but the farmer is equally opposed to arrogance and injustice, whether from the worker or the capitalist. We have watched the growth of organized labor, at first with curiosity, then with a certain amount of sympathy and lately with apprehension and distrust. We have helped organized labor to win legislative battles. We have given help in many ways. But to-day we are counting up the result. We find that we have helped dig a pit

National Founders' Association Telegraphs to President Wilson on Autocracy of Labor

The President, White House, Washington, D. C.:

The National Founders' Association, composed of nearly six hundred manufacturers operating iron and steel foundries, and employing scores of thousands of workmen, in annual convention assembled, unanimously pledges to you and our country the unswerving loyalty of its members and the resources of its industrial plants.

To gain that measure of efficiency requisite for the proper equipment of our army and navy, we stand squarely on the platform that the processes of labor shall not be interfered with and trust employees throughout the various industries of the nation may quickly be brought to a realization of the fact that autocracy of labor is fully as disturbing to the welfare of mankind as is the autocracy of government.

With full and complete support of their employees the manufacturers of our country will back the boys in the trenches to the limit without thought of emolument, but they will be powerless

unless the present autocratic demands of some branches of labor for purely selfish advantage are dissipated.

We are unqualifiedly in accord with the declaration of the Council of National Defense that industrial and labor conditions as existing prior to the war should continue for the duration of the war. Any action to the contrary, whether of industry shirking its duty or labor interposing restrictions of production and attempting to change existing conditions, should be regarded as treason and punished as such.

We realize that there must be absolutely loyal co-operation between employer and employee until this war is won; that patriotism must be unsullied and uninfluenced by personal gains and selfish consideration; that the mutual pledges of representatives of the workingmen and directors of industries must be kept inviolate until a righteous peace is re-established on the earth.

THE NATIONAL FOUNDERS' ASSOCIATION.

branches of the Government and felt that protest ought not to be left to the single manufacturer, but should come from such an association as the National Founders' Association.

A Labor Bid for Public Esteem

Mr. Drew called attention to the claim for patriotic attitude made by organized labor in calling off unlawful strikes, thus getting widespread publicity for an act which had really been taken by the same group that subsequently called the strike off. He emphasized that something needs to be done for the silent 90 per cent of wage earners seeking to remain at work. He said that the Lackawanna Bridge Co., in connection with the development of the large shipbuilding activities at Newark, is getting plenty of men after repeated attempts to bring about strikes, and in violation of Mr. Gompers' promise. So well had the Lackawanna company been able to get labor that it was now ahead of schedule and has all the men it needs. The so-called patriotic order coming from the convention of the American Federation of Labor at Buffalo seems to have some influence on the men, though the organization claimed to have no control over the building trades.

for the farmers, and that the sympathy which we extended to the unions had better be saved for ourselves.

The farmers' alliance with labor led to the granting of certain immunities and privileges to labor, which to my mind are undemocratic and unjust. We should all stand equal before the law. But labor was put above the law. True, you will say that the farmers were included in this preference and immunity. But the man who does not violate the law, nor intends to violate it, wants no immunity. The farmer lives within the law. He seeks no exemption from its terms. He did wrong in helping others to secure special privileges and exemptions. He realizes that now, unless I am mistaken.

The farmer to-day sees his mistakes and he has paid for those mistakes. The farmers' natural alliance is with industry.

The National Industrial Conference Board

L. A. Osborne, vice-president Westinghouse Electric & Mfg. Co., New York, spoke on the National Industrial Conference Board, in place of the executive secretary of the board, Magnus W. Alexander, taken suddenly ill. While the purposes of the Conference Board have been outlined from time to time in these columns, it was em-

phasized at the meeting that the board was never intended to secure immediate and quick action, but was for thoughtful study of industrial economic problems and the dissemination of the information obtained through various channels to the public. The board was doing well when we entered upon the war, and many looked to the board for expressions of opinion on the special problems growing out of the war. As a result the board has been reorganized to take care of emergency matters.

The Ante-War Status of Labor

Some mention was made of how the board was approached by the Council of National Defense and an executive committee appointed as an advisory committee. The board has continued its studies, such as those of social insurance, hours of labor, financial matters and taxation laws. How the advisory committee met in Washington over considerable periods and appeared several times before congressional committees in regard to the income tax measure was told, but meanwhile the Council of National Defense began to show concern over labor matters. These columns have noted at length how the board put forward its plan that during the period of the war the conditions and relations between employer and employee should remain as they were prior to the war. The attitude in Washington for a while was that things will right themselves, but in August the serious nature of the situation began to be realized. Then it was that the board was invited to provide a plan and a meeting was called of as many State and national associations as possible, when the statement mentioned was adopted. As yet, however, the Council of National Defense has taken no action on the recommendation, as it seems impossible as yet to get all labor organizations to take similar action. Since the publication of the statement in Washington 68 to 70 State, national and local associations have endorsed it, Mr. Osborne said.

The present status of the board is that by resolution of these conventions, the board is allowed to speak for industry collectively, but Mr. Osborne mentioned that this is not likely to be done, unless quick action is necessary. One point is that the things which industry asks to be done must not be delegated too generally, but that the industrial heads themselves must take an active interest. It is yet necessary to inaugurate an intensive campaign of public education and as the spokesman of industry, the industry itself must support the board generously, if it is to be successful.

Betterment in Railroad Operation

How economies may be obtained in railroad operation at a time when railroads have difficulty in financing extensions and additional equipment was told in an informal address by L. F. Loree, president Delaware & Hudson Railroad Co. He mentioned that there were cases of railroads which had been inadvisably built in sections where they could not be economically operated and others which had passed their period of usefulness owing to changes and developments in the territory served. He regarded it likely that 30,000 to 40,000 miles of track under such conditions might well come up and be relaid in places where railroad facilities are especially needed. There is barely a road, he added, in which one or more branches could not under present special conditions be taken up.

Track structure, he continued, will not show great deterioration for 18 months, and in a general way equipment is in fairly good condition. Some locomotives there are indeed idle ready for use. Passenger equipment is more than ample. The average passenger car will accommodate 60 persons, but in actual use about 11. There are less excursion trains and some trains have been discontinued. Freight movement is not specially good, he admitted. One trouble is that too often unnecessary delays occur in yards. In case of the Kansas City Southern some time ago it was found that 70 hr. was lost in the six yards through which some freight had to pass and by special attention to yard conditions the delay was reduced to 19 hr. In the last six months such delays have been cut in half on the Delaware & Hudson Railroad, and in this he expected that

the railroads of the country are going to show marked economy. Freight cars as a whole are in good physical condition.

Mr. Loree paid his respects to the commission form of government of railroads. He asserted briefly that while the railroads represent one-third of the productive activities of the country, they are now facing bankruptcy and that the commission after a generation of opportunity has either got to put the railroads on their feet or "you have got to get rid of the commission." The railroads, he said, are no longer under indictment. But they have no credit and to maintain themselves have to pay promptly for material and wages.

Shippers' Part in Ameliorating Transportation

Recent betterment in results are as much as anything due, he said, to the co-operation of shippers. Railroad men are gratified by the help given them by shippers. One trouble has been the small amount of units and the need of quicker loading and unloading. He urged shippers not to over-order the number of cars required, nor file duplicate orders for empty cars. The average time of loading cars is two days, and counting 200,000 cars, 100,000 cars would be saved if the loading time could be reduced to one day. Further economies would also be made by loading to 10 per cent above capacity or to utilize fully the cubic contents of a car where possible.

He dwelt on the reconsigning of cars, developing out of the practice to start a car before the buyer has actually been obtained. The result is that at each division terminal the car is consigned to some one or another representative of the original shipper, as the car proceeds toward the point of the expected customer. Though an attempt had been made to allow for a charge on such practices, the Interstate Commerce Commission refused to make the grant. He urged also that shippers should not try to use roundabout routes to overcome an embargo. He specially advised the use of automobile trucks for short hauls, as the railroads do not make money on short hauls, but prefer to confine their business to long hauls.

The Winona Foundry School

What may be mentioned as the revival of the Winona foundry school at Indianapolis was described by William M. Taylor, Indianapolis. He told how some years ago the association had established the school, but now it was a vocational school of the Indianapolis public school system. About Oct. 1 it began taking off heats. The National Metal Trades Association members in that city have a contract with the school board for the establishment of a machine shop, the manufacturers to be permitted to dictate the curriculum. After a two years' course the boys are taken into their shops at a minimum of 20c. per hour. The foundry is used to give the boys getting the machine shop training an insight into foundry work, but a similar contract is expected to be put through with the foundrymen of the city in connection with the school foundry. The school is not as commonly known a manual training school. The boys work 30 hr. a week in the foundry and then they get instructions in other subjects, such as civics, mathematics, etc. The serious problem is to get boys who can be induced to take up the work.

Labor Saving in the Foundry

A remarkable series of motion pictures of labor saving appliances in the foundry was shown under the direction of the committee on foundry methods, of which J. J. Wilson, Cadillac Motor Car Co., is chairman. These were shown particularly to indicate possibilities of machine work in the average jobbing foundry, and to induce a greater degree of engineering study in the foundry than is now generally the case. President Barr contended that too often 50 per cent greater output could be obtained with a given force if the same skill was applied to the producing department as is to the selling department. This was the first showing of the pictures. They are intended for the widest possible use. For example, local foundrymen's associations will be given an opportunity to secure the pictures, as will foundry foremen associations. They covered practices in plants like the King Sewing Machine Co., Buffalo

the Cadillac Motor Car Co., the foundries for the Buick Motor Car Co., the stove foundry of the McClary Mfg. Co., London, Ont., and the Lumen Bearing Co., Buffalo.

Commissioner McClintock's Report

In his report as commissioner of the association, A. E. McClintock pointed out that an analysis of the causes of strikes involving members in the past season shows the refusal of the employer to concede union control to be the main point of contention. The wage question as a strike issue, he said, has been unimportant, as the law of supply and demand for labor has taken care of that.

He described the situation at Hamilton, Ohio, "combatting one of the most vicious strikes in its history." An association member there is working on extremely urgent and important Government work, he said, to the extent of 80 per cent of capacity. "It is one of three plants in this country capable of producing this equipment. It has operated open shop for many years. The wages and hours were better than the union scale for that district. The equipment and shop conditions will compare most favorably with those in any shop in this country.

"After weeks of the most vigorous organizing effort but 22 out of a total of 126 molders could be induced to join the union. Their men were not interested in the union, as their pay was better than the scale set for union shops. The union officials then decided to have a union molder disobey shop rules to any extent necessary to bring about his discharge. This was done, and the local union promptly voted the shop on strike. By resort to violence and rioting, molders were prevented from continuing at work. The local police officers refused to act in maintaining law and order. The Governor, on being appealed to, stated he was powerless to act, as the State National Guard had been taken into the Federal Service. This condition continued for four months, when the foundry was placed under the protection of the Federal Court through the issuance of a permanent injunction against the molders' union."

The International Molders' Union has, he said, an average paid membership of 44,000. The United States census for 1910 gives the number of male molders and coremakers in the United States as 137,262. Including Canada, a conservative estimate, he figured, would place the total number at present at 150,000. The union, therefore, embraces about 30 per cent of the total number. In the year union dues have increased from 40c. to 60c. per member per week. In five years 48 new local unions have been organized and 63 discontinued.

Secretary Taylor's Report

The report of Secretary J. M. Taylor showed that 56 concerns had been admitted to membership and 22 lost by resignation. Nearly all the resignations were due to financial reasons, changes in management and concerns going out of business. The average number of employees reported showed a gain over the previous year of about 10 per cent.

Mr. Taylor told at length of specific indications of the value of the association's publication, *The Review*, which later in the meeting it was voted should be called "The Open Shop," provided the change in name met the approval of the National Metal Trades Association, which jointly with the founders' association publishes the periodical.

Officers Elected

William H. Barr, Lumen Bearing Co., Buffalo, was re-elected president. Samuel L. Moore, vice-president and general manager, Moore Bros. Co., Elizabeth, N. J., was elected vice-president. J. M. Taylor was re-elected secretary and A. E. McClintock was reappointed commissioner by the administrative council after the close of the convention. The district committees elected are as follows:

FIRST DISTRICT: F. C. Fromm, Manufacturers' Foundry Co., Waterbury, Conn.; A. E. Newton, Reed-Prentice Co., Worcester, Mass.; Enoch Shenton, Wm. Highton & Sons Co., Nashua, N. H.; C. C. Chesney, Pittsfield Works, General Electric Co., Pittsfield, Mass.; C. H. Tholl, General Fire Extinguisher Co., Providence.

SECOND DISTRICT: D. W. Sowers, Sowers Mfg. Co., Buffalo; H. P. Macdonald, Sneed & Co. Iron Works, Jersey City;

James H. Caldwell, Ludlow Valve Mfg. Co., Troy, N. Y.; A. S. Blagden, American Malleables Co., Lancaster, N. Y.; Louis P. Willsea, Willsea Works, Rochester, N. Y.

THIRD DISTRICT: Ely Griswold, Griswold Mfg. Co., Erie, Pa.; Wm. S. Hallowell, Harrison Safety Boiler Works, Philadelphia; C. S. Koch, Fort Pitt Steel Casting Co., McKeesport, Pa.; J. Turner Moore, Reading Steel Casting Co., Reading, Pa.; John E. Thropp, John E. Thropp's Sons Co., Trenton, N. J.

FOURTH DISTRICT: Geo. O. Rockwood, Rockwood Mfg. Co., Indianapolis; Charles F. Seelbach, Forest City Foundry & Mfg. Co., Cleveland; Samuel Blackburn, John B. Morris Foundry Co., Cincinnati; E. R. Frost, National Machinery Co., Tiffin, Ohio; James Inglis, American Blower Co., Detroit.

FIFTH DISTRICT: H. T. Hornsby, Central Foundry Co., Webb City, Mo.; E. E. Baker, Kewanee Boiler Co., Kewanee, Ill.; W. H. Winslow, Winslow Brothers Co., Chicago; John B. Strauch, More-Jones Brass & Metal Co., St. Louis; C. R. Stephens, Moline Plow Co., Moline, Ill.

SIXTH DISTRICT: C. A. Luster, Clyde Iron Works, Duluth, Minn.; Max W. Babb, Allis-Chalmers Mfg. Co., Milwaukee; Fred M. Prescott, Prescott Co., Menominee, Mich.; John G. Osborne, Lakeside Malleable Castings Co., Racine, Wis.; L. R. Barrett, Vulcan Iron Works, Winnipeg, Can.

SEVENTH DISTRICT: Geo. W. Watts, Canada Foundry Co., Toronto; A. R. Goldie, Goldie McCulloch Co., Ltd., Galt, Ont.; H. Cockshutt, Cockshutt Plow Co., Brantford, Ont.; J. C. Russell, John McDougall Caledonian Iron Works Co., Ltd., Montreal; W. M. Gartshore, McClary Mfg. Co., London, Ont.

EIGHTH DISTRICT: Z. W. Wheland, Wheland Co., Chattanooga, Tenn.; W. D. Tynes, Hardie-Tynes Mfg. Co., Birmingham; E. Y. Hartwell, Hartwell Iron Works, Houston, Tex.; Geo. R. Lombard, Lombard Iron Works & Supply Co., Augusta, Ga.; J. Goslin, Joubert & Goslin Machine & Foundry Co., Birmingham.

Duties of Director of Steel Supply

The following statement, which supplements the recent announcement in these columns, is authorized by the Council of National Defense:

"Under and subject to the raw-materials division of the War Industries Board of the Council of National Defense, J. L. Replogle, vice-president American Vana-dium Co., will act as director of steel supply and will have charge of the distribution and be responsible for the prompt and proper execution of all orders for iron and steel, other than ordnance, for the United States and allied Governments.

"Mr. Replogle will receive weekly reports from the iron and steel producers showing the tonnage of iron and steel of the various classifications on order for the United States and allied Governments, as well as domestic and foreign orders for general purposes. He will also keep informed as to mill capacities and mill production, and in cases of retarded output secure reasons therefor, and in conjunction with the manufacturers and the War Industries Board make every proper effort to remove obstacles which prevent maximum output of war necessities.

"Mr. Replogle will at all times work in close harmony with the various departments of the Government, which will give him as much preliminary information as possible in order that material can be placed to the best advantage of all concerned and with due consideration with respect to giving mills the best operating conditions to permit maximum output at minimum cost so far as the Government necessities will allow.

"Mr. Replogle will have all necessary steel statistical records to which the authorized representatives of the various Government departments will have access."

The German Electric Steel Co. of Berlin, which was founded in 1916 with a capital of 5,000 marks, increased soon afterward to 250,000 marks, now intends to increase its capital further to 2,000,000 marks, according to the London *Ironmonger*. It is reported that one-half of the shares have been taken by the town of Frankenberg, near Chemnitz, where a new plant is to be built and to which the headquarters of the company are to be transferred. The steel plant will be moved from Berlin to Frankenberg.

The Hedason Mfg. Co., maker of screw machine products, has removed from its former location at 28 Whitney Avenue, New Haven, Conn., to 1041 State Street.

Unable to Spend All Money Voted

War Preparations Proceed Rather Slowly—Secretary McAdoo Makes Statement—Board of Excess Profits Advisers Selected to Help Administer War Revenue Act

WASHINGTON, Nov. 20.—The submission to the Secretary of the Treasury during the past few days of the estimates of the several executive departments of expenditures to be made during the remainder of the current fiscal year has resulted in the disquieting disclosure that war preparations have proceeded at so slow a pace since July 1 that the War Department has been able to disburse but 50 per cent of the appropriations allotted to the four months' period ending Oct. 31. Other departments, also, are behind their estimates by very large sums, and as a result Secretary McAdoo concludes that the country may be able to get through the present fiscal year by raising not more than \$10,000,000,000 additional by the issue of bonds, war savings certificates and Treasury certificates of indebtedness. Further taxation, effective during the current year, may be avoided, but, as Congress at the coming session must provide both appropriations and revenues for the fiscal year beginning July 1, next, it is more than probable that a new revenue measure will be framed during the winter or spring designed to produce approximately \$2,000,000,000.

In giving this important news to the public, Secretary McAdoo, in an address before the Investment Bankers' Association in Baltimore during the past week, endeavored to draw an optimistic deduction from the very serious facts, emphasizing the conclusion that the financial resources of the country would not be strained in the immediate future to provide the funds necessary for the prosecution of the war until next July. He was very careful, however, not to pledge the Treasury Department to refrain from recommending to Congress further taxation during the present fiscal year, and he significantly omitted any reference whatever to the requirements of next year, which Congress must take up for immediate consideration. The Secretary said in part:

Secretary McAdoo's Statement

During the past few days the various departments of the Government have submitted to me their estimates of expenditures during the current fiscal year. On the basis of these estimates, I am confident that, allowing for a liberal balance in the general fund at the close of the fiscal year, not more than \$10,000,000,000 remains to be raised by the issue of bonds, war savings certificates and Treasury certificates of indebtedness.

This is not regarded by the Treasury Department as a task which will in any way strain the capacity or resources of the United States. The splendid success of the second Liberty loan shows that the people are fully determined to support the war and are prepared to make such sacrifices of luxuries, pleasures, comforts and conveniences as may be necessary.

The estimates of the various departments include appropriations already made and proposed supplemental estimates to be submitted at the forthcoming session of Congress. Though the estimated ordinary expenditures (excluding advances to the Allies) for the year average about a billion a month, the ordinary expenditures for the four-month period ended Oct. 31 have been only \$1,296,000,000, or at the rate of \$324,000,000 a month. For instance, the expenditures for the War Department for the four-month period have been 50 per cent less than was estimated by that department for that period. It may be confidently expected, therefore, that the actual expenditures for the balance of the fiscal year ending June 30, 1918, will not at the most exceed the estimates.

The actual credits to the Allies have averaged \$500,000,000 per month, or within the estimates of the Secretary of the Treasury, and the actual cash disbursements against the credits so established have fallen below the estimates. Of the expenditures made for the account of the United States, as well as those for the account of the Allies, a very great preponderance is for purchases in the United States, so that the operations involve merely a shift of credits and have not been a strain on the financial resources of the country. Not only is this true, but every precaution is being taken, by wise restrictions upon the shipment of gold, accompanied by care-

ful study of the course of international trade, to husband the resources of the country.

The Statement Explained

Secretary McAdoo's frank statement to the effect that "the expenditures for the War Department for the four-month period have been 50 per cent less than was estimated by that department for that period" carries with it a revelation of great importance. The language employed is susceptible of three interpretations, but the correct one is easily distinguished. Either the War Department overestimated the cost of the material it planned to purchase or its estimates covered twice as much material as it has proved necessary to buy, or its deliveries have been so delayed that payments have been consumed but one-half the current allotments of funds. It is no secret here that the last explanation is the correct one. It should be said, however, that this involves no disparagement of the ability of the department officials in contracting for the colossal quantities of material ordered since the United States became involved in the war, for there have been no precedents or criteria to guide them, while at every hand obstacles, some of them almost insurmountable, have been met with all the resourcefulness at command.

In the Ordnance Bureau in particular it has been necessary to overcome a situation due to the refusal of Congress to provide funds for the equipment of private plants to co-operate with the arsenals, and it has proven a gigantic task to fit up steel works, forging plants, and machine shops in a dozen different districts to help in the great work of producing guns, carriages and shells. That this work of equipment, while breaking all records, has progressed less rapidly than was hoped for, is no reflection upon the efficiency of the bureau.

Wooden Ship Building

It will not be surprising to those who have followed developments in the Shipping Board to learn that its appropriations will be drawn upon much more slowly than was anticipated and that the sums provided at the last session of Congress will not only meet all the drafts to be made during the current fiscal year, but, together with the authorizations heretofore provided, will carry the program through the greater part of next summer. The development of the wooden ship program has proved a great disappointment and it is probable that the average period of construction of this type of vessel will materially exceed that of the fabricated steel ships. The original idea that large numbers of these ships could be built in from four to eight months was long ago abandoned and the recent announcement that the Emergency Fleet Corporation has decided to substitute Douglas fir from Oregon for Southern white pine in the construction of these vessels indicates that little substantial progress has been made upon the ships the keels of which have thus far been laid.

The new naval program, including the 160 additional destroyers for which appropriation was made at the last session, is progressing at a normal rate of speed and in some respects shows increased rapidity as compared with peace times. The stupendous tonnage involved, however, has not only tested the existing facilities for naval construction, but has made necessary large yard extensions and increased equipment requiring much time as well as money, and it is not surprising, therefore, that a very large proportion of the allotment for the first four months of the current year is still on hand.

The Aviation Program

A similar situation exists as to the aviation program for which Congress appropriated approximately \$700,000,000. A great deal of essential preliminary

work has been done in developing this program and the establishments which are to build the projected airplanes are rapidly getting into shape for quantity production. Up to the present time, however, the output of Liberty motors, which are to be largely used by the American aviation corps, has been inconsiderable, while the construction of the planes themselves has made little better progress. Experienced engineers have foreseen all the obstacles encountered and are neither disappointed nor discouraged at the progress made, but, of course, the net result is that the money appropriated by Congress has not been spent and is still in the Treasury.

The slow progress made in the war preparations and the comparatively light drafts on the appropriations granted by Congress will result in a very rigid examination of all estimates received by the Appropriations Committees of the two houses at the coming session. Conservative members of both houses pointed out last summer that the amounts being so readily voted to meet the estimates of the departments could not possibly be spent during the fiscal year ending June 30, 1918, and suggested that smaller sums be allotted coupled with authorizations to make contracts covering the full estimates. The administration officials, however, urged so strongly the immediate appropriation of the full sums desired that Congress was carried completely off its feet and bills carrying fabulous amounts were rushed through without the slightest consideration. The passage of the aviation bill carrying \$664,000,000 through a single house in an hour or two and without any real discussion was typical of much of this procedure.

War Revenue Problems

Quite irrespective of whether, in view of Secretary McAdoo's disclosures, it will be regarded as necessary to enact additional revenue legislation during the coming winter, it is expected that a measure will soon be introduced amending the war revenue act in certain important particulars and especially as to the provision imposing the so-called war excess profits tax. The only escape from this necessity would be possible by the promulgation of regulations not only construing but actually amending the law so as to avoid the illogical consequences of blunders made in the drafting of this feature of the act. The Internal Revenue Bureau has already given serious consideration to the practicability of putting certain strained constructions upon several provisions and the question as to whether this is practicable will probably be decided at an early date, as the result of the deliberations of the Board of Excess Profits Advisers just appointed by the Secretary of the Treasury to assist the department in administering the war revenue act. These advisers are:

Representative Cordell Hull, a member of the House Committee on Ways and Means.
 T. S. Adams, economist, of Yale University.
 Wallace D. Simmons, president Simmons Hardware Co., St. Louis and Philadelphia.
 J. E. Sterrett of Price, Waterhouse & Co., accountants, New York.
 S. R. Bertron of Bertron, Griscom & Co., bankers, New York.
 E. T. Meredith, editor *Successful Farming*, Des Moines, Iowa.
 T. W. McCullough, editor *Omaha Bee*, Omaha, Neb.
 Stewart W. Cramer of the National Council of Cotton Manufacturers, Charlotte, N. C.
 Henry Walters, chairman of the board, Atlantic Coast Line and Louisville & Nashville Railways.

In announcing the appointment of these advisers, Secretary McAdoo emphasizes the established policy of the department "to co-operate intelligently with the public and business in the administration of the tax laws" and says that "in the important work these men have been called upon to do there must be constructive co-operation between the department and the taxpayers of the country in the proper collection of the full amount of all revenue authorized by Congress, which is absolutely necessary to winning the great war in which the nation is engaged." Referring to the manner in which business men from the beginning of the war have shown their desire to help, Secretary McAdoo cites the action of the Chamber of Commerce of the United States in recommending that a large part of the war

expenditures be obtained from taxes on excess profits and incomes. "This evidence of the readiness of business to do its full share in the support of the Government's war policies," says the Secretary, "has been recognized by the administration and every effort will be made to have this great burden, advocated by those who will bear the greater part of it, fall with as little hardship as possible consistent with a just and thorough administration of the law."

Preparing for Gigantic Task

The Internal Revenue Bureau thoroughly understands Secretary McAdoo's policy. In planning for the gigantic task of collecting the war revenue, a new organization has been effected, additional divisions have been created, and preparations made for a large increase in personnel. Every official, it is declared, will be required to so conduct his own work as to clearly reflect the department's policy.

In connection with the appointment of the Board of Excess Profits Advisers, Secretary McAdoo makes it plain that their work will not be limited to construing the law, but they will assist taxpayers in calculating their obligations to the Government under the various provisions of the war revenue act. "The Government is fortunate," says the Secretary, "to obtain as advisers men of such broad vision and experience, who are patriotically interested in seeing that the money so vitally needed for war purposes is collected with the least inconvenience to the public and to business generally. The law presents problems of construction and interpretation that are of vital importance. The policy of the department will be to continue to keep in close touch with the taxpayers, so as to secure the most reliable and complete information before promulgating administrative regulations. The recognized standing and ability of these advisers are an assurance that the problems will be solved in the light of the best available constructive knowledge and experience."

Program of Information

"In addition to the action of the department in availing itself of the services of these advisers, plans are being formulated for a program of information for the taxpaying public. It is essential that every taxpayer shall know how to compute the amount of the taxes he must pay and the time, place and method provided for its payment. The department recognizes that information of this kind will be indispensable because the law puts upon the taxpayer the responsibility for making the returns by which his tax is measured."

"Steps are being taken to bring the tax-gathering machinery of the Government into closer relationship with the taxpaying public. An office known as the Division of Taxpayers' Co-operation has been created in the Internal Revenue Bureau. Under the direction of this office a nation-wide plan of co-operation with taxpayers is being developed. Through the organization that will carry out this plan essential information will be conveyed in the most direct manner to each taxpayer."

"The department recognizes also the desirability of relieving the public of any uncertainties as to the interpretation and administration of the law. Hasty action must be avoided and due consideration must be given to actual conditions and facts, so that the department's rulings shall not disturb sound and desirable trade practices. It is essential, however, that the work shall proceed intelligently and expeditiously."

It is very doubtful that the Board of Advisers will be able to correct by regulation some of the blunders made in the drafting of the excess profits tax law. It has been found, for example, that a large number of small concerns having profits aggregating but a few thousand dollars per annum, which were intended to be practically exempt from taxation, will be called upon to pay a very large percentage of their net earnings because, through an oversight, the first and lowest "bracket" of the excess profits schedule will not apply to them and they become liable under a bracket which does not include the \$3,000 exemption. It is understood that a provision covering this point has already been drafted and will be offered as an amendment to the revenue act as soon as Congress meets.

W. L. C.

ESTABLISHED 1855

THE IRON AGE

EDITORS:

A. I. FINDLEY

WILLIAM W. MACON

GEORGE SMART

CHARLES S. BAUR, *Advertising Manager*

Published Every Thursday by the IRON AGE PUBLISHING CO., 239 West 39th Street, New York

W. H. Taylor, *Pres. and Treas.*

Charles G. Phillips, *Vice-Pres.*

Fritz J. Frank, *Secretary*

M. C. Robbins, *Gen. Mgr.*

Owned by the United Publishers Corporation, 243 West 39th

Street, New York. H. M. Swetland, *Pres.* Chas. G. Phillips,

Vice-Pres. W. H. Taylor, *Treas.* A. C. Pearson, *Secy.*

BRANCH OFFICES—Chicago: Otis Bldg. Pittsburgh: Park
Bldg. Boston: Equitable Bldg. Philadelphia: Real Estate

Trust Bldg. Cleveland: Guardian Bldg. Cincinnati: Mer-
cantile Library Bldg. San Francisco: 320 Market Street.

Subscription Price: United States and Mexico, \$5.00 per year;
single copy, 20 cents; to Canada, \$7.50 per year; to other
foreign countries, \$10.00 per year.

Entered as second class matter, June 18, 1879, at the Post Office at New York, New York, under the Act of March 3, 1879.

The War's Economic Changes

In view of the extensive program of the United States at the present time in the regulation and control of industries by the Government, the experience of Great Britain in this direction is extremely interesting. The London *Economist*, in describing present conditions, says that while it is recognized that a great and increasing amount of state control is necessary so long as the war lasts and afterward while the immense dislocation of the world is being straightened out, "we are all most heartily sick of it." The *Economist* expresses the opinion that the war has done more to make all classes hate the very idea of state socialism than could have been achieved in the past if all the newspapers, books and speeches delivered had been concentrated on this one purpose. It then shows how a committee is collectively much less intelligent than its individual members. It is asserted that experiences in Great Britain with state controlled railroads, ships, coal mines, engineering works, food, drink and newspapers causes an intense longing for the day when the defense of the realm act will pass out of existence; yet it is admitted that there cannot be a return to the old free, untrammelled individualism. "We can no longer conduct business each man for himself, each industry for itself on the principle of the devil take the hindmost," says this London authority, which adds that co-operation has shown what might be achieved by co-operation under voluntary organization; for, inefficient as industries under government control have been and are, the wastage before the war under the old free competitive system has been demonstrated. With methods developed to the greater degree of efficiency that now exists, it is clear that if the present waste still caused by friction between management and labor, between producer and distributor can be eliminated or minimized, short hours of work will be fully compatible with high pay and prices lower than they now are.

As to conditions in this country, it is doubtful if state socialism as such has made progress; but it certainly is true that people are not as easily alarmed as they once were about certain tendencies being classified as socialistic, whether they be in the line of increased Government authority or in allowing greater power to corporations to

co-operate. One thing is certain: that conditions after the war will be far different from those before the war or those now existing. The value of co-operation on the part of railroads and great industries is appreciated more than ever in this country and the follow of insisting on unlimited competition will never prevail again.

The tendencies of the times are illustrated in the declaration of Mr. Vanderlip before the Interstate Commerce Commission at Washington last week at the hearing on the proposed increase in freight rates. He expressed the opinion that increased rates would simply be a poultice for existing ills and suggested the possibility of a radical change fashioned after the plan of the Federal Reserve system with representatives of labor and the Interstate Commerce Commission on the central governing board which could decide when combinations could be formed and when increases should be granted in traffic as well as in wages. He expressed the fear that unless the present system of regulation without allowing combinations of railroads is abandoned, Government ownership will be urged as the only remedy for the serious railroad problems in this country. This surely is a long step away from individualistic operation of industry, but the proposal does not shock the country and it with other plans will receive serious consideration.

Mr. Vanderlip, like all thinking men who are in contact with the railroads and all the great industries of the country, is seeking such light as present conditions afford, and the war period is certain to bring experience in large measure to assist in laying the foundations for better systems.

Workmen and Performance

There is reason to suspect that the claim that workmen are not putting forth their best effort is being made altogether too sweepingly. The glaring instances, of I. W. W.'s, of coal miners who object to being fined if they do not work five eight-hour days a week, and others, are probably magnified when it comes to considering totals or averages. Many individual instances of "labor shortage" are in reality evidence that men are working. While there are floating idlers in all the large cities, the "odd-job" man in the hamlet is hard to find.

doubtless because he now has a steady job. The sum total of work done is very large.

In some directions that is an improvement in the amount of work done. Many employers testify to the steadier labor of men through their having purchased Liberty bonds on the installment system. Men who hitherto made no effort to save money have been given an incentive and are putting in more regular hours. Instead of the first loan acting as a drag upon the second, many employers found their forces subscribing much more freely to the second. The educational work done in the first campaign, the tendency toward thrift inculcated, bore good fruit when the second campaign was started.

It is well to recall now that the restriction in immigration, which in the spring of 1915 was already used as the basis for predicting a labor shortage, has now extended over a period of more than three years. The net increase in population due to the passenger movement, aliens and citizens, has been as follows, in fiscal years and in July and August of this year:

1913	754,205	1916	137,138
1914	687,065	1917	217,907
1915	117,237	July-August	—12,378

The fiscal year 1913 was a good year industrially, while the next was a bad one. The two together can be taken, therefore, as involving a normal average influx for average times, whereas we have since had good times. The 1913-4 average increase in population due to passenger movement was about 720,000 a year or 60,000 a month. In three years and two months additional we should have had an increase of 2,280,000 in our population, according to the previous rate, whereas there was an increase of only 472,282 in the three fiscal years, with an efflux of 12,378 last July and August, making a net increase of about 460,000, or a deficiency of 1,820,000 from the expected.

All things considered, therefore, it is probably safe to conclude that on an average the amount of work being done per man at the present time is large. There are glaring and unfortunate cases of exceptions, which should be rectified, but the chief difficulty is that the number of men is not great enough in proportion to the amount of work that should be done.

More Transportation or Less Freight

The condition on the railroads is such that an early decision is imperative whether greater transportation facilities shall be provided or less freight shall be required to be moved. The railroads have been handling a record volume of freight, yet have not been able to meet the demands upon them, and congestion has so increased in recent weeks that a remedy must be found, particularly as the first blasts of winter will effect their usual slowing down in railroad operations.

The subject is being discussed by the laity, who suffer from embargoes, car shortage, and slow movement of freight. In the opinions expressed as to what should be done there is seen the fruit of the railroads' campaign in recent years, that they should be enabled to purchase more rolling stock, and there is quite a discussion as to the means that

should be provided. While the discussion centers upon an advance in freight rates, there are two proposals, one that rates should be advanced to such an extent as to enable the railroads to make purchases out of earnings, the other that rates should merely be so increased as to insure earnings prospects sufficient to invite capital to invest in railroad securities.

Railroad managers are themselves not a unit on this subject, some taking the interesting stand that they ought not to seek to float new securities when the Government is engaged in borrowing such huge sums while others claim that now is the time to put the railroads in such condition that now and in future they will be able to borrow money.

As opposed to the proposition that the capacity of the railroads should be increased to meet the demands, there is the plan for discontinuing unessential industrial operations, so that less freight would be seeking movement and also much man power would be released. The various departments at Washington having direct and indirect interest in this matter are now seriously considering the compilation of what will be known as a list of unessentials. Last week the railroads submitted a list of about 500 commodities, the movement of which might be considered unessential to the prosecution of the war, and this list is now being studied. The dispatch from Washington that a list has already been adopted, but is kept secret for the time being to avoid unsettlement to industry, does not seem to be well founded, more authoritative advices being that no list will be finally adopted until the parties in interest have been given an opportunity to present their respective cases. Actual restriction, however, has begun, with the priority order dated Oct. 27, prohibiting the use of open-top cars in the transportation of materials to be used in road making and repair, building places of amusement, and making passenger vehicles and furniture. The question is only how far restriction shall go.

The question has its psychological as well as its material aspect. It was frankly admitted that one of the considerations leading to the fuel administrator's order as to the curtailment in electrical illumination was the sentimental influence that would be exerted, by giving the public another illustration of the sweeping character of the country's devotion to the work of prosecuting war. Meatless and wheatless days have likewise their psychological function. Curtailment of industry by cutting out unessentials is not necessarily in the same category. It would not make its separate appeal to each of the individuals in the masses. On the one hand men would be thrown out of jobs in factories doing unessential work, and certainly no desirable sentimental appeal would be involved in that. It would produce scarcity of the commodities marked unessential and abstention from buying them would come from pecuniary, not sentimental, reasons. The publication of a list of industrial operations decided upon as unessential would exert an unsettling influence upon business. On the whole, the psychological influence would be unfavorable, and the matter must be considered only from its material side, whether the cutting out of unessentials will increase the supply of labor and of transportation sufficient to make it pay as a national operation.

The other proposition, to increase railroad facilities, has its own difficulties, greater than seems generally to be realized. It is admitted that there is enough main line track. Increasing railroad facilities involves one or more of the following: More cars, more locomotives, more yard and siding facilities.

There is no scarcity of cars as cars, the difficulty being with their movement, and the question in railroad circles is whether it is more motive power or greater yard and siding facilities that is needed to produce a heavier freight movement. It is not feasible at this time to build large numbers of standard steel construction cars, for the plates at least are not available, being required to push the shipbuilding program to the utmost. Composite cars could be built, using wood in conjunction with structural shapes, but that is to be considered only as a last resort, because such cars would be of far less than full value after the war.

As to yards and sidings, the difficulty there is not so much material as it is labor. The railroads have not even been able to maintain their permanent way of late, and nearly all is already well below the respective standards. At best, additional yard and siding capacity could only be brought into being slowly.

A remedy frequently suggested is that the Government retard its locomotive program for the railroad in France. Doubt is expressed whether the "U. S. A." locomotives are needed as rapidly as they are being built. The total of standard-gage locomotives on order for the Government is 980, all for the railroad in France and all of the one type, 80-ton consolidation. On July 18, 150 were ordered each from the Baldwin Locomotive Works and the American Locomotive Co. In August, 380 additional were ordered from Baldwin and in October 300 more. The first Baldwin locomotive was completed Aug. 11, in 20 working days, work then proceeding at the rate of four per day. Apart from these locomotives there were ordered 1,004 60-cm. gage locomotives from Baldwin, chiefly gasoline, and 30 saddle tank locomotives from the Vulcan Iron Works, making a grand total of 2014 locomotives, standard and narrow gage, steam and gasoline, ordered by the Government, of which only the 980 80-ton standard gage need be considered as a locomotive-building proposition.

The country's capacity in standard locomotives is estimated by a competent railroad manager at 5500 a year, which under pressure and with standardized designs might easily become 20 a day. The orders of the United States Government, therefore, are not employing anything like half the locomotive building capacity. Large orders for our Allies are being filled, while orders for 1500 locomotives for Russia were tentatively placed recently, the actual inception of work awaiting settlement of details the importance of which can readily be imagined. The advantage to ourselves of furnishing locomotives to Russia, if they will be used for prosecuting the war, cannot be overestimated. The inconvenience of curtailing some of our unessential industrial activities cannot be weighed against the burden that would be thrown upon our shoulders by a collapse of the defensive on the eastern front.

Thus between cutting down the volume of freight

offered for transport and increasing the facilities of the railroads no decision can be lightly reached. The most efficient co-operation between all parties in interest, Government departments, railroad managers and industries, is imperative to develop the best plan. Nor is that the whole matter. While the existing railroad equipment has done well, it could do still better. There is need for at least two things more—a still more complete unification of the railroads as one system and a larger performance of labor. In the latter connection a partial or complete suspension under Federal war authority of various State laws regarding hours of labor, size of train crews, etc., is believed by practical men to be imperative.

FORD WILL HELP

Standardization of Vessels Will Hasten the Building Program

WASHINGTON, Nov. 20.—An important step in the reorganization of the Shipping Board has just been taken looking to a reduction in the number of types of ships to be built and the thorough standardization of vessels, materials and equipment. Charles Piez, vice-president of the Emergency Fleet Corporation, who is now in full charge of the shipbuilding operations, has appointed Henry Ford, the automobile manufacturer, a special assistant to devise standardizing methods with a view to hastening quantity production. This important innovation may halt construction in certain shipyards for a short time, but it is believed that ultimately it will greatly increase the output and will place the entire shipbuilding program on an up-to-date basis in line with modern engineering methods.

One of the first discoveries made by Mr. Ford, who arrived in Washington during the past week to take up the duties of his new office, was that the fleet corporation is now attempting to build eight different types of vessels, and that these represent a cut of 13 types in the original Denman-Goethals program, which contemplated no less than 21 models differing in size, lines, material, motive power, speed, equipment, etc. The present program includes three types of steel ships to be built in private yards, three types of the fabricated ships to be built in Government controlled yards and two types of wooden ships. The important differences between these eight types necessarily involve a great variety of materials, power units and equipment, and as a result a multiplicity of details which has contributed not a little to the slowing down of the building program.

It is Mr. Ford's idea that all the steel ships should be reduced to a single type designed to carry a maximum amount of cargo at a rate of speed that will outrun the submarines. He believes these vessels should have a cargo capacity of about 8000 tons, should be about 500 feet in length and should have a speed of not less than 16 knots. Such a model, it will be noted, is larger than any of the steel ships thus far designed except a small number of 9000-ton vessels, which the fleet corporation has planned to build in one of the Government controlled shipyards.

It is Mr. Ford's plan, as soon as a standard type of ship has been decided upon, to secure quantity production in the same manner in which Liberty motors are now being turned out. A large number of blue prints and specifications will be provided and orders for standardized materials, including plates, shapes, power units, equipment, etc., will be placed wherever possible, a special effort being made, however, to induce manufacturers to undertake the production of a single specialty in order to develop accuracy and quantity output to the maximum.

Thomas A. Edison is an enthusiastic supporter of Mr. Ford's plans and with Mr. Ford has recently gone

over the entire project with Chairman Hurley of the shipping board. Mr. Edison believes that if any time is lost now as the result of revising the designing of the cargo carriers it will be more than offset by the speed with which standardized vessels can be built. On this point Mr. Ford talks with the utmost confidence.

"The differences in methods and plans of construction now to be found in the different shipyards," he says, "ought to be wiped out, and all of them run at top speed and in the same way. To accomplish this every available factory in every part of the country ought to be called into action. Each factory should be asked to make only that part of a ship for which it is equipped, or for which it can be most readily equipped. The shipyards themselves ought to be merely assembling plants. By this method we would make use of all that is best in the present speedy operation of those motor car plants which devote themselves to assembling."

The fleet corporation is experiencing no difficulty in securing supplies of steel for the vessels contracted for. Reports reaching headquarters here indicate that all the mills furnishing this material are up to their schedules and in some cases ahead of them. It has been practicable to organize this branch of the work in a very satisfactory manner and there will be no delays on this score.

Strike Conditions at Boston

The strikers on structural work on various Government jobs in the Boston district refused to heed the orders of the international presidents of their unions to return to work, following the decision to that effect made at the Buffalo meeting of the American Federation of Labor. Late in the week, following the announcement that Stanley King of the War Department and Admiral Harris of the Navy Department were to come to Boston the first of this week to confer with them, the men were ordered back to work on all the jobs except that of the destroyer plant at Squantum, for which the contract is held by the Aberthaw Construction Co. There is no conflict except over the enforcement of closed shop rules. Colonel Dickson, commandant of the Watertown Arsenal, announced on Monday that there was temporarily no strike at the Arsenal. The situation is temporary because the leaders of two of the unions have made demands that the non-union workers employed during the strike be laid off. Following orders of the War Department, these men are being retained on the job and all other competent men applying for work are being taken on, as the demand for workers is greater than the unions can supply. The carpenters on the Watertown job have not returned to work and have announced that they will not do so until after the conference with Mr. King. The strike is affecting the work at Squantum but slightly, as the contractors have had little difficulty in filling the men's places.

Iron-Ore Imports Falling Off

Iron-ore imports have been considerably less in 1917 than at any time during the war, though in 1916 they were larger than in some pre-war periods. To Sept. 1, 1917, they were 613,529 gross tons as compared with 919,856 tons to Sept. 1, 1916, and 797,845 tons to Sept. 1, 1915. More detailed figures in gross tons follow:

	Total	Per Month
Eight months ended Aug. 31, 1917.....	613,529	76,691
Fiscal year ended June 30, 1917.....	1,149,958	95,829
Fiscal year ended June 30, 1916.....	1,425,717	118,809
Fiscal year ended June 30, 1915.....	1,196,077	99,673
Calendar year, 1914.....	1,350,588	112,549

It thus appears that the 1916 imports were unusually large under war conditions. Of the 1917 imports more ore has come from Spain than at any time during the war. Of the total to Sept. 1, this year, 133,906 tons was from Spain, or four times the amount in the same period in 1915. Imports from Cuba have correspondingly lessened.

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Electric Steel Furnaces in Great Britain

In Great Britain 131 electric steel melting furnaces are now operating or under construction or represented by application for permit, according to the London *Ironmonger* of Oct. 20. They are distributed as follows:

Heroult.....	48	Stassano.....	4
Greaves Etchells.....	33	Stobie.....	3
Electro-Metals.....	27	Induction.....	2
Rennerfelt.....	7	Girod.....	1
Snyder.....	6		

Of the total 70 are in Sheffield. This probably makes the largest number of such furnaces in any one center in the world.

Coal-Supply Situation Is Critical

Fuel Administrator Announces Policy to Be Pursued to Conserve Fuel—Believed Agreement with Miners Will Be Reached

WASHINGTON, Nov. 20.—A critical situation with respect to the coal supply has developed as the result of the discovery that a huge shortage of approximately 50,000,000 tons now exists due to the enormous increase in consumption by the war industries and the railroads during the past nine months. For several weeks the office of the Fuel Administrator has insisted that the coal supply was ample, pointing to the fact that production during the calendar year to date is at least 50,000,000 tons in advance of last year. It now appears, however, that the consumption of coal has exceeded that of the corresponding period of 1916 by more than 100,000,000 tons, leaving an enormous net shortage. All the power possessed by the Government will be invoked to increase production and regulate distribution with a view to keeping the war industries going at top speed, and the Fuel Administrator and the Attorney-General have already taken steps to prevent any form of profiteering in the handling of the nation's coal supply.

The entire increase in coal consumption, according to Dr. Garfield, is due to the necessities of the war. Munition plants, running 24 hours a day at full capacity with continuous demands from the Government for increased production, are using from one-third to one-half more coal than they were a year ago. The Bethlehem Steel Co., for example, is said to require an increased coal supply of approximately 250,000 tons per month, or 3,000,000 tons a year. In 1916 the Federal Government purchased 2,000,000 tons of coal, but for the current calendar year the demand for fuel for the actual fighting forces of the army and navy will result in the consumption of at least 8,000,000 tons. There has also been a huge increase in the demands of public utility plants, particularly in the industrial sections of the country, and the increase on this account is figured at not less than 35 per cent. In the main, however, this is due to increased power furnished to munitions plants and other war industries.

Dr. Garfield's Policy

"To close up the gap of 50,000,000 tons between the production and the consumption of coal," says Dr. Garfield, "the Fuel Administration will take steps to increase production, facilitate transportation and enforce the most economical use of the available coal supply. The Fuel Administration is determined that war industries, public utilities and domestic consumers shall be supplied. To this end the co-operation of every coal user in the country will be necessary. The Fuel Administration will use all of its authority to prevent the waste of fuel or the unnecessary use of fuel. Domestic consumers will be urged to conserve their supplies.

"Wherever the unnecessary use of coal in industry threatens to embarrass war industry the Fuel Administration will see that the war needs are filled. All activities which are unnecessary to the maintenance of military or economic efficiency will have to give way by curtailment of their supply to the necessities of the war, and this must be accomplished without undue curtailment of the domestic supply. This policy is expected to relieve not only the demands for coal, but a part of the tremendous pressure on the transportation facilities of the country."

Many Complaints Received

A flood of complaints from all parts of the country has reached the Fuel Administration during the week describing the alleged hoarding of coal by munitions plants and other lines of industry, and protesting against the refusal of dealers to sell coal and coke at prices fixed by the Government. At the request of Dr. Garfield, Attorney-General Gregory has notified all United States District Attorneys to take immediate

steps to inform themselves as to conditions in their districts and to use the utmost vigilance and energy in detecting and prosecuting operators, jobbers and others discovered in profiteering practices. A number of special attorneys have been detailed to assist in this work and the Attorney-General states that every effort will be made to enforce full compliance with the price rulings as they have been determined by the President and the Fuel Administration.

Producers of coke seeking to alter the prices fixed by the Fuel Administration must establish that their cost of production justifies the changes asked for. In this connection Dr. Garfield has issued the following regulation:

"If a change in the price of coke is desired, the applicant should first procure the Federal Trade Commission's uniform cost sheets. These should be filled out for the calendar year of 1916 as a whole and for 1917 month by month to the date of application. The cost sheets may be secured from either the Federal Trade Commission or the Fuel Administration."

Alleged Hoarding

Accompanying several complaints received by the Fuel Administrator concerning the alleged hoarding of coal by munitions plants have been photographs of large coal piles which, on their face, appear to be strong evidence in support of the charges. In all of the cases investigated, however, the fact has developed that the coal piles shown in the photographs, although containing large quantities of coal, represent but a few days' supply for very large establishments consuming great quantities of fuel. In no case has the Fuel Administrator been satisfied that there was improper hoarding of coal by any manufacturing concern.

On the other hand, it has been made clear that a critical situation exists among the munitions manufacturers in several important districts. Charles H. Ten Weeges, State Fuel Administrator for Delaware, has called Dr. Garfield's attention to the condition in the Wilmington district, where a large number of munitions plants are located. Many of these plants draw heavily upon the power and lighting facilities of Wilmington and neighboring towns, while others provide their own power. For some time past these power plants have been on a hand-to-mouth basis and the Fuel Administration has now promised to take steps to assure an adequate supply of fuel in order that there may be no slowing down of the war industries.

State fuel administrators have been instructed by the United States Fuel Administrator that they have complete authority in their respective States to enforce the proper distribution of the coal supply at proper prices.

Coal dealers are prohibited from selling coal at a price "subject to revision" by an order just issued by the Fuel Administrator. Heretofore the Administration has allowed all producers to sell their coal at prices fixed by the Government with a stipulation in the selling agreement that the price might be revised if the Government should change the published rates. This practice has resulted in much confusion, as certain dealers have refused to make readjustments and some consumers have objected to paying additional amounts after receiving their coal.

B. G. Hinckley of Boston, Mass., has been named to assist L. A. Snead of the apportionment and distribution section of the United States Fuel Administration in all matters relating to coal and coke for New England. With the closing of navigation on the Great Lakes, the Fuel Administration will arrange to have special shipments of coal made to New England.

It is now believed that a working agreement will be reached between the Fuel Administrator and the

miners' organizations that will include a mutually satisfactory automatic penalty clause designed to prevent strikes, lockouts and other disturbances calculated to interrupt coal production. On Nov. 26 Dr. Garfield will confer here with the representatives of the miners in Illinois and other coal fields with a view to reaching an agreement to continue through the period of the war, subject to revision only after a stated period and by mutual consent. Several other miners' organizations in the Southwest have tentatively agreed to accept the penalty clause and it now seems probable that a similar arrangement will be effected covering practically the entire bituminous field.

The operators in the Pennsylvania anthracite field, after a conference in this city during the past week, have agreed to wage increases ranging from 15 to 44 per cent on condition that the advances are absorbed in higher coal prices allowed by the Fuel Administrator. Immediately after reaching this agreement, a committee of operators and miners called on Dr. Garfield and requested that the anthracite prices be raised to meet the increases. Dr. Garfield promised to give the matter his immediate attention, but stated that he would make a very careful investigation before rendering a decision. The operators estimate that the wage increase would add about 45 cents a ton to anthracite prices and give the miners about \$40,000,000 additional pay annually, imposing a corresponding burden upon the consumers. Up to the present time Dr. Garfield has given no indication as to what he will do in this matter and, although the operators point to the fact that when bituminous producers and miners recently fixed a new wage scale he promptly increased coal prices to absorb the raise, the fact is recalled that bituminous prices had been cut sharply but a short time before by the Government's fixing all rates, while the controlled price of anthracite is substantially at the same level as before the passage of the Lever act. Anthracite miners are now working under a contract made last April, which supplemented a four-year agreement signed in May, 1916.

W. L. C.

War Advisory Committee of Chemists

Because of the great amount of war work being done by the Bureau of Mines, Secretary of the Interior Lane has the following well known chemists to act as an advisory board to the bureau: Dr. Wm. H. Nichols, General Chemical Co., New York, chairman; Prof. H. P. Talbot, head of the chemical department of Massachusetts Institute of Technology, Boston; William Hoskins, consulting chemist, Chicago, Prof. H. P. Venable, head of the chemistry department, North Carolina University, Chapel Hill, N. C.; E. C. Franklin, professor of chemistry, Leland Stanford University, Stanford, Cal., and Dr. Charles L. Parsons, chief chemist of the Bureau of Mines. The board will discuss and advise upon gas warfare research, the minerals especially needed for munitions, and the recently enacted law for the regulation of explosives.

Crucible Steel Co. of America

At the organization meeting of the board of directors of the Crucible Steel Co. of America held at Pittsburgh, Nov. 19, the following officers were re-elected for the ensuing year: Herbert DuPuy, chairman of the board; O. H. Wharton, president; H. A. Brown, J. W. Dougherty, Geo. W. Sargent, John A. Sutton and Geo. A. Turville, vice-presidents; Geo. A. Turville, secretary and treasurer; H. F. Kress, J. M. McComb and A. A. H. Niebaum, assistant treasurers; H. F. Kress and E. W. Reed, assistant secretaries; N. W. Nolen, comptroller; G. A. M. King, auditor; H. L. Gellinger, assistant auditor.

The Elyria Machine Co., engineers and machinists, Elyria, Ohio, is erecting a new steel building, 200 x 300 ft. and will make a new addition to its plant. The company has purchased recently about 70 lathes and miscellaneous shell equipment at a cost of about \$200,000, suitable for 155 M-M shells. This machinery was bought from leading machinery houses in Cleveland.

Bureau of Iron and Steel Scrap in Operation

The American Board of Scrap Iron Dealers has begun the operation of its Bureau of Iron and Steel Scrap in the office of the secretary, C. A. Barnes, Widener Building, Philadelphia. The bureau has the co-operation of the American Iron and Steel Institute, the American Railway Association and the National and Eastern Bar Iron institutes. A letter has been sent to all steel mills by the American Iron and Steel Institute asking for their co-operation in carrying out the purposes of the bureau, which are to effect quick disposition of all rejected cars and to prevent congestion of cars and otherwise facilitate the rapid movement of scrap. The following letter has been sent by the bureau to purchasing departments:

This bureau is a neutral agency and has been established for the purpose of co-operating with the shipper, carrier and consumer of iron and steel scrap, in the interest of the Government.

The necessity for this Bureau was brought about by the serious transportation conditions, as pointed out by the American Railway Association, who would have found it necessary to issue most drastic orders had not the buyers and sellers themselves offered a remedy.

PURPOSE—Its main purpose to assist in reducing the number of cars under load with iron and steel scrap:

FIRST—To effect quick disposition of all rejected cars.

SECOND—By reducing the number of rejections.

THIRD—To prevent congestion or assist in the disposition of cars in a congested district.

The bureau will not enter into any questions regarding price or contracts, or otherwise interfere in the relations between buyer and seller.

OPERATION—For the purpose of facilitating the operation of the bureau, will you please have blanks printed conforming to the enclosed sample rejection sheet, which should be used in quadruplicate. The day upon which a car of scrap is rejected please mail one notice to this bureau (1); one to the shipper (2); one to the railroad agent making delivery (3); keeping one for your own file (4).

The establishment of this bureau does not relieve the shipper or the consignee from making every possible effort to quickly dispose of the car by agreement, but should they fail to do this within 48 hours, the bureau will take such action as is necessary in the circumstances.

The cost of the operation of this bureau is at present being advanced by the American Board of Scrap Iron Dealers and a punitive charge of \$25.00 will be made against the shipper of every rejected car, which has to be disposed of through this bureau. In cases where dispute arises as to specification, the bureau will send an experienced inspector, who will be an employee of this bureau upon whose report the chief of the bureau will make his determination.

We, therefore, ask the heartiest co-operation of all the parties interested and ask you to treat with this bureau as an absolutely neutral agency. While the office of the Chief of the Bureau will be located in Philadelphia, we hope shortly to announce subsidiary offices or representatives in the various important consuming centers of the United States.

If there are at the present time any rejected cars at your plant, please send this bureau full information at once.

Very truly yours,

THE BUREAU OF IRON AND STEEL SCRAP.

P.S.: If you prefer, the bureau will have rejection slips printed and forwarded to you at cost and would ask you to indicate the probable number you will require.

First Call for Women

What is reported to be the first call for women for mechanical war work made by the Government was issued at the Portsmouth Navy Yard, Nov. 17. Women will be used in the assembly room of the electrical shop and more than 200 applications were filed for the 100 positions open. The women will work on an 8-hour basis at a flat rate of \$1.68 a day minimum and \$2.72 a day maximum, with double time for overtime.

The strike of the molders in the various foundries at Bradford, Pa., was adjusted last week, the men having been given an advance of 25 cents per day up to Jan. 1, and after that date, 50 cents per day. The men were receiving \$4.50 per day for 9-hours, and demanded \$5 per day. A compromise was reached by which the men will receive \$4.75 per day until Jan. 1, and \$5 per day thereafter. The men have returned to work.

Iron and Steel Markets

MILL HANDICAPS INCREASE

New Business Chiefly for Government

Further Activity in Pig Iron—Lake Ore Movement May Reach 62,000,000 Tons

The steel industry is making harder work than ever of its effort to meet war conditions, with an increasing handicap from fuel scarcity and transportation failures, and the limitation of output due to the conflicting purposes of those in authority from whom steelmakers now take their orders. Bankings of blast furnaces from coke shortages keep up, and at Youngstown steel output at some plants has been cut nearly 50 per cent.

It is two months since price fixing began, and the market results are scarcely appreciable apart from some progress in the pig-iron trade, which has shown itself more amenable to control than the finished-material lines.

Dislocations in rolling-mill operation are more marked. While these have been commonly laid to irregular gas coal and coke supply, there is increasing evidence of the shifting of consumption, and in some lines its reduction, and the embargoes on exports have left some mills with occasional gaps which selling forces are trying to fill.

A feature of the week has been the wide and prompt acceptance by the warehouses of prices which represent drops of \$10 to \$20 per ton in many products, and as much as \$50 per ton in sheets and \$70 in plates. Being on a Pittsburgh basis, the new jobbing schedules carry considerable freight additions for a very large part of the tonnage involved.

While a good amount of finished steel for use on Government contracts is sold currently, little business is coming out for rolled material for other purposes. Plate inquiries include one for 20,000 tons of 3/16-in. plates cut in 30-in. squares, for the Government. Plate prices quoted by certain mills able to make early shipment continue higher than the Government basis, but are approaching it, one Central Western mill now quoting 5c. as against 6c. recently.

On the Government's orders for 1,500,000 tons of shell steel now being allotted, shipments are to be completed by June 15. Half the amount will be for 6-in. shells alone. There are yet to come large requisitions for Great Britain and France.

Labor supply has improved in spots, but the problem will be made more serious by the second draft. It is plain that dilution of skilled labor must begin soon, particularly under the urgent call of the Government for thousands of mechanics for service in France. At Pittsburgh as high as \$3.85 is offered for common labor on a 10-hour day.

The flow of structural steel orders related to the war program is swelling so fast that a meeting of fabricators is to be held in Pittsburgh on Tuesday. A very large part of the 111,000 tons of bridge and building work put under contract in October, representing 61.5 per cent of capacity, was

directly and indirectly for the Government. A later item is the placing with a Canadian fabricator, because it has a good working staff, of 50,000 tons of ship work as part of a total of 45,000 tons monthly for ten months to be delivered at Philadelphia.

New price fixing includes a 3c. basis for light rails 25 lb. and heavier. The new basis of 3.50c. for bar iron is a mill price and not f.o.b. Pittsburgh as with steel bars. Its maintenance alongside 2.90c. for steel is problematical.

Sheets have sold more freely to the general trade than any other finished product since official prices came in. The mills are well filled for this year and some good sales have been made for the first quarter. The Government is placing orders for 20,000 tons, largely blue annealed.

Philadelphia has led again in pig-iron buying, a total of 25,000 tons of basic iron being taken by several steel companies. The Steel Corporation has bought 8000 tons of basic iron in that market in the past fortnight. At Cleveland a 5000-ton sale of basic is reported and the buyer seeks 10,000 tons additional for the second quarter of next year. At Pittsburgh steel companies whose blast furnace output is curtailed by lack of coke are trying to buy iron but with little success.

There was fear in October that enough Lake Superior ore would not be brought down to carry the industry through to the arrival of new ore in the season of 1918. But the November movement has been greater than usual and it is now believed the season's total will come close to 62,000,000 tons, as against 64,734,000 tons moved by water last year.

In the scrap market competition has given lower prices than those of the Government for various materials, but there is a scarcity of No. 1 railroad wrought. By various evasions, as by charging a high price for forms of scrap not under control, the Government maximum on railroad wrought has been exceeded. This is likely to bring about the fixing of prices on all scrap. A more stringent requirement of permits for shipping scrap is in preparation by the railroads.

Pig tin made a new high record at 77c. this week, due to the limiting of British permits to actual consumers and the scramble of the small trade for the little available stock.

Pittsburgh

PITTSBURGH, Nov. 20—(By Wire).

The fuel situation in the Youngstown, Ohio, district this week is not any better than it was last week, and if any change has taken place it is worse. On Tuesday afternoon the Youngstown Sheet & Tube Co. had two Hubbard and one Youngstown blast furnaces idle, also its two new steel bar mills, other smaller finishing departments, and 102 out of 204 of its by-product coke ovens. The Republic Iron & Steel Co. has been able so far to keep its five Hazelton blast furnaces going, with no stock coke ahead, its Hannah furnace being out for relining and repairs. Its Bessemer steel plant has been off nearly

A Comparison of Prices

Advances Over the Previous Week in Heavy Type, Declines in Italics

At date, one week, one month, and one year previous

For Early Delivery

Pig Iron, per Gross Ton:	Nov. 21,	Nov. 14,	Oct. 24,	Nov. 22,
	1917.	1917.	1917.	1916.
No. 2, N. Philadelphia...	\$34.25	\$34.25	\$34.25	\$25.50
No. 2, Valley furnace...	33.00	33.00	33.00	26.00
No. 2, Southern, Cin'ti...	35.90	35.90	35.90	23.90
No. 2, Birmingham, Ala.	33.00	33.00	33.00	21.00
No. 2, furnace, Chicago**	33.00	33.00	33.00	27.00
Basic, d.f.d. eastern Pa.	33.75	33.75	33.75	26.00
Basic, Valley furnace...	33.00	33.00	33.00	25.50
Bessemer, Pittsburgh...	37.25	37.25	37.25	30.95
Malleable Besse., Ch'go**	33.50	33.50	33.00	27.00
Gray found., Pittsburgh...	32.75	32.75	32.75	26.95
L. S. charcoal, Chicago...	37.50	37.50	35.50	26.75

Rails, Billets, etc.,		Per Gross Ton:	
Bess. rails, heavy, at mill	...	...	\$38.00
(1-h. rails, heavy, at mill	...	...	40.00
Bess. billets, Pittsburgh.	\$47.50	\$47.50	\$47.50 52.50
(1-h. billets, Pittsburgh.	47.50	47.50	47.50 52.50
(1-h. sheet bars, P'gh...	*51.00	51.00	51.00 52.50
Forging billets, base, P'gh	60.00	60.00	... 78.00
(1-h. billets, Phila. ....	...	...	... 55.00
Wire rods, Pittsburgh...	57.00	57.00	57.00 65.00

Finished Iron and Steel,				
Per Lb. to Large Buyers :	Cents	Cents.	Cents.	Cents.
Iron bars, Philadelphia...	*3.685	3.685	4.25	2.659
Iron bars, Pittsburgh...	*3.50	3.50	...	2.90
Iron bars, Chicago.....	3.50	4.50	4.50	2.65
Steel bars, Pittsburgh...	2.90	2.90	2.90	2.90
Steel bars, New York...	3.095	3.095	3.095	3.069
Tank plates, Pittsburgh.	†3.25	3.25	3.25	4.25
Tank plates, New York...	...	...	...	4.419
Beams, etc., Pittsburgh...	3.00	3.00	3.00	3.00
Beams, etc., New York...	3.195	3.195	3.195	3.019
Skelp, grooved steel, P'gh.	*2.90	2.90	2.90	2.85
Skelp, sheared steel, P'gh.	*3.25	3.25	3.25	3.00
Steel hoops, Pittsburgh...	3.50	3.50	...	3.25

*Agreed prices. †As yet only a few sales made

****The average switching charge for delivery to foundries in the Chicago district is 50c. per ton.**

	Nov. 21, 1917.	Nov. 14, 1917.	Oct. 24, 1917.	Nov. 23, 1916.
Sheets, Nails and Wire,				
Per Lb. to Large Buyers:	Cents.	Cents.	Cents.	Cents.
Sheets, black, No. 28, P'gh	5.00	5.00	...	3.65
Sheets, galv., No. 28, P'gh	6.25	6.25	...	5.25
Wire nails, Pittsburgh...	3.50	3.50	...	2.85
Cut nails, Pittsburgh....	...	...	...	2.80
Fence wire, base, P'gh...	*3.25	3.25	...	2.80
Barb wire, galv., P'gh...	*4.35	4.35	...	3.70

Old Materials,	Per Gross Ton:			
Iron rails, Chicago.....	\$35.00	\$35.00	\$36.00	\$25.00
Iron rails, Philadelphia...	38.00	38.00	38.00	24.00
Carwheels, Chicago....	30.00	27.75	26.00	18.00
Carwheels, Philadelphia...	35.00	30.00	29.00	19.00
Heavy steel scrap, P'gh.	29.00	29.00	27.00	21.00
Heavy steel scrap, Phila.	26.00	26.00	25.00	21.00
Heavy steel scrap, Chgo	28.00	28.00	26.00	21.00
No. 1 cast, Pittsburgh....	26.00	26.00	27.00	17.00
No. 1 cast, Philadelphia...	31.00	30.00	28.00	19.00
No. 1 cast, Chgo (net ton)	23.00	22.50	20.00	16.00
No. 1 RR. wrot. Phila....	35.00	35.00	35.00	24.50
No. 1 RR. wrot. Chgo (net)	31.00	31.00	28.50	22.00

Coke, Connellsville, Per Net Ton at Oven:				
Furnace coke, prompt...	\$6.00	\$6.00	\$6.00	\$6.50
Furnace coke, future...	6.00	6.00	6.00	3.75
Foundry coke, prompt...	7.00	7.00	6.00	7.00
Foundry coke, future...	7.00	7.00	6.00	5.00

Metals.				
Per Lb. to Large Buyers:	Cents.	Cents.	Cents.	Cents.
Lake copper, New York.	23.50	23.50	23.50	34.00
Electrolytic copper, N. Y.	23.50	23.50	23.50	34.00
Spelter, St. Louis.....	7.75	7.75	8.00	12.25
Spelter, New York.....	8.00	8.00	8.25	12.50
Lead, St. Louis.....	6.37 1/2	6.37 1/2	6.12 1/2	7.00
Lead, New York.....	6.50	6.50	6.25	7.15
Tin, New York.....	77.00	73.00	61.62 1/2	45.12 1/2
Antimony (Asiatic), N. Y.	13.75	13.75	14.75	14.00
Tin plate, 100-lb. box, P'gh.	\$7.75	\$7.75	....	\$6.00

all the time for several weeks, and when it is not running some of the finishing mills are shut down waiting for steel. The Brier Hill Steel Co. has had to bank several times its Grace and Tod blast furnaces for lack of coke, and as a result of all this the output of steel in the Youngstown district is very much restricted, and just at a time when it is so badly needed. All these steel companies say they have plenty of coal and coke bought, but the railroads are unable to handle it as fast as needed. The growth of the by-product coke industry has resulted in the opening of new fields for the supply of by-product coal, and the railroads do not seem to have fully grasped the situation and are failing in the delivery of this coal to the ovens. Two blast furnaces at the Ohio works of the Carnegie Steel Co. are banked for lack of coke, and Niles furnace was put out of blast largely for the same reason. The Bessemer and open-hearth steel plants at the Ohio works are compelled to run lighter than usual owing to shortage in supply of pig iron. In the Pittsburgh district the situation is not so bad, but all the steel works and smaller manufacturing plants are feeling seriously the shortage in supply of fuel and the inadequate movement of cars by the railroads. So far the only plant that had to absolutely shut down was that of the Carbon Steel Co., which was off three or four days recently, but is again running. Some relief may come when lake navigation closes and cars now in the ore trade are diverted to the hauling of coal and coke. However, this probable advantage may be offset if winter weather should set in and heavy snows come, which always seriously affect railroad traffic. The outlook for any betterment in supply of fuel and traffic movement by the railroads is decidedly discouraging, and conditions are likely to be very bad all through the winter months. Conditions in the iron and steel trades show no important development. Late Tuesday afternoon the general committee on steel and steel products of the American Iron and Steel Institute announced he price of 3c. per pound, base, on light rails, 25-lb. to 45-lb.

Prices were also announced on chain and strip steel. The amount of pig iron and finished steel that has been sold since the Government prices first came out on Sept. 24 has been relatively small. The supply of pig iron is short; steel mills are sold up on billets and bars and have nothing to offer. On nearly all lines of finished steel mills are sold up for anywhere from two to three months to a year or more, and consumers are having a hard time finding any mills that will sell material for delivery this year at the Government prices. The supply of labor is reported a little better, but when the second draft comes labor conditions will no doubt be adversely affected. As high as \$3.80 per day of 10 hr. is being offered in advertisements in the daily press for common labor, of which there is a very great shortage.

Pig Iron.—The famine in the supply of Bessemer and basic pig iron noted in our report last week has become intensified and local steel companies are scouring the pig iron making centers trying to find iron and not getting it. The National Tube Co., American Steel & Wire Co., Jones & Laughlin Steel Co. and other large producers of pig iron are running very short, and are offering to pay the freight to Pittsburgh on any Bessemer or basic iron that can be had in other localities. One sale of 1500 tons of Bessemer iron has been made to the National Tube Co.; and other subsidiaries of the Steel Corporation are trying everywhere to find iron. The Commonwealth Steel Co. of St. Louis is in the market for 5000 tons of basic iron for second quarter, but gets no encouragement from any of the Valley producers. It is not unlikely that several leading pig iron producers may decide to allot their output to the customers unless the situation soon improves. Many more blast furnaces are active now than a year ago, and yet the output of pig iron is much smaller, due to the shortage of fuel. There have been sales and loans of Bessemer iron up to 40,000 or 45,000 tons and we note a sale of 6000 tons of basic for first quarter at the official price of \$33 at furnace. We also note

sale of 6000 tons of foundry iron for first half of next year at \$33 Valley furnace. Were it not for the Government prices that control the market, it is stated here that Bessemer and basic iron would be selling at \$70 to \$75 per ton at furnace. It is a serious question where the iron is to come from, during the next three or four months, to keep the steel works active. If the fuel supply does not soon improve, other blast furnaces in the Valleys and probably some in the Pittsburgh district will have to bank.

We quote as follows: Basic pig iron, \$33; Bessemer, \$36.30; gray forge, \$32; No. 2 foundry, \$33; No. 3 foundry, \$32.50, and malleable Bessemer, \$33.50, all per gross ton at Valley furnace, the freight rate for delivery in the Cleveland and Pittsburgh districts being 95c. per ton.

Billets and Sheet Bars.—All the steel mills are running short of steel due to lighter output owing to the growing scarcity in supply of pig iron. One of the Steel Corporation interests has bought 18,000 tons of steel ingots from a nearby steel plant at the billet price of \$47.50. There would be no trouble to sell almost any quantity of billets and sheet bars at the Government prices if the steel could be found. The Carnegie Steel Co. is sold up for months ahead, and so far has not considered steel contracts for next year. The Government has fixed the price of \$60 per ton on forging billets, an advance of \$12.50 over the base price of soft billets. We now quote 4 by 4 in. soft Bessemer and open-hearth billets at \$47.50, sheet bars \$51, and forging billets \$60 base, all f.o.b. at mill, Pittsburgh or Youngstown.

Ferroalloys.—So far there is not much desire shown on the part of consumers of ferrosilicon and silvery iron to contract for next year at the recently announced Government prices, feeling no doubt that they will be able to get a full supply when needed and that the prices will not be any higher. The new demand for ferromanganese is not very active, consumers being covered for some time ahead. One sale was made recently of 1500 tons of 60 per cent domestic ferromanganese at \$249 delivered. We quote 80 per cent domestic ferromanganese at \$250, delivered, for prompt or future shipments. We quote 1 per cent spiegeleisen at \$60 to \$65, and 50 per cent ferrosilicon for prompt shipment at \$150 to \$160 per ton, delivered. On contracts, prices range from \$140 and higher. Most large consumers of 50 per cent ferrosilicon have covered with the leading maker for their supply over all of 1918.

We now quote 9 per cent Bessemer ferrosilicon at \$54, 10 per cent \$55, 11 per cent \$58.30, 12 per cent \$61.60, 13 per cent \$64.90, 14 per cent \$68.20, 15 per cent \$71.50, and 16 per cent \$75. We quote 6 per cent silvery iron \$40, 7 per cent \$42, 8 per cent \$44.50, 9 per cent \$47, 10 per cent \$50, 11 per cent \$53, and 12 per cent \$56. These new prices on Bessemer ferrosilicon show reductions over former prices, ranging from \$35 to over \$60 per ton. On silvery iron the new prices show reductions over former prices of \$35 to \$40 per ton. All the above prices are f.o.b. makers furnace, Jackson or New Straitsville, Ohio, these furnaces having a uniform freight rate of \$2 per gross ton, for delivery in the Pittsburgh district.

Steel Rails.—Late Tuesday afternoon the General Committee on Steel and Steel Products of the American Iron and Steel Institute announced the price of 3c. per lb. on light rails 25 lb. and heavier, f.o.b. Pittsburgh. No change was made on prices for standard sections, and these were not even considered. The Carnegie Steel Co. has not been a seller of light rails for several months, having the entire output of its Edgar Thomson rail mills under contract practically up to the end of next year. The Cambria Steel Co. has been a seller of light rails to some extent. No prices were fixed by the Government on rerolled rails. We quote standard section rails of Bessemer stock at \$38, and open-hearth \$40, per gross ton, Pittsburgh. We quote new light rails, 25 lb. and heavier sections at 3c. per lb. f.o.b. mill, Pittsburgh. Extras for the lighter sections are given elsewhere in this issue.

Structural Material.—Local fabricators are not bidding actively on new work coming up, being filled for six months or more. The American Bridge Co. has taken 1200 tons of bridge work for the Baltimore & Ohio Railroad. Much of the new work coming up is for the Government, on which details are withheld. We quote beams and channels up to 15 in. at 3c. at mill, but none of the mills has any structural material to offer at this price for this year's delivery.

Plates.—None of the leading plate mills has any plates to offer for this year at the Government price of 3.25c., but occasionally some of the smaller mills sell a limited quantity at that price, owing to some unusual conditions that come up. Three or four plate mills in this district had orders for plates for shipment to Japan, and when the embargo was declared a good part of these were released, and have since been sold to domestic consumers. Last week the Emergency Fleet Corporation placed some very heavy orders for plates and shapes for Government boats with Pittsburgh and Youngstown mills, and that will take a good part of their output for some time. Fully 75 per cent or more of the entire plate output of the Carnegie Steel Co. is going into Government work, and the Jones & Laughlin Steel Co. is also furnishing a very large output of its plates to the Government. The steel car companies report that deliveries of plates by the mills are very little better. We quote 1/4 in. and heavier sheared plates at 3.25c. at Pittsburgh.

Sheets.—The new inquiry for sheets is heavy, but the quantity of sheets available from the mills for delivery this year is very limited. All the sheet mills are working on Government orders placed some time ago, which are being rolled and shipped as fast as possible. The Government has been a heavy buyer of sheets for shipment to England and France, and will no doubt be a still larger purchaser for some time to come. The shortage in supply of steel is restricting output of sheets to some extent. Nearly all the mills are booking contracts for sheets to manufacturing consumers for delivery over first half of next year, with the exception of galvanized, on which delivery is restricted to first quarter. Demand for sheets from automobile builders has fallen off very much, owing to decrease in output of pleasure cars.

Tin Plate.—The tin plate distribution committee has recently allotted to the mills nearly 600,000 base boxes of tin plate, most of it for shipment abroad. This business was placed mostly with the mills, whose order books were in such condition that they will be able to make fairly prompt shipment. The tin plate mills are being deluged with inquiries from customers for their supply of tin plate for first half of next year, and a very heavy business has already been booked for that delivery. Owing to shortage in supply of steel for making tin plate, due to the fact that Government requirements are taking so much of the output of the steel mills, it is probable that many consumers will find their allotment cut down materially for first half of next year, and some mill operators say it may be necessary to entirely cut off supply to former customers, as they will not have the tin plate to spare. The outlook is there will be enough tin plate made next year to supply the packers of perishable foods, but packers of non-perishable foods will have to look to other material for containers, and in addition the output of tin plate next year is certain to be lighter than for a long time. The whole energy of the tin plate makers next year will be directed to getting out a maximum output of tin plate. We quote coke plate at \$7.75 per base box, f.o.b. Pittsburgh, for Bessemer or open-hearth stock. Prices on tin plate are given in detail on page 1267.

Wire Rods.—The export and domestic demand for wire rods is heavier than the mills are able to supply. Many consumers of rods, knowing sometime ago that lower prices were coming, refrained from buying and allowed their stocks to get very low. As soon as the Government prices were announced, these consumers sent in their orders, but now find the mills are not able to handle them, and they are not getting rods as fast as they are needed. An inquiry from Canada is in the market for 1500 tons of soft rods for early shipment.

Wire Products.—Some fairly heavy contracts for wire and wire nails are being placed with the mills by manufacturing consumers for delivery over first quarter of 1918. Some mills are not inclined to speed up their output of wire and wire nails, as they state they can put the steel into other products on which the prices allow a much larger profit. Small concerns that have to pay \$57 for rods, and put these into nails at \$50 per ton, say they cannot do so and realize a profit. The

export demand for wire and wire nails is heavy and much higher prices are obtained than from the domestic trade. Prices on wire and wire nails now quoted by all the mills are given in detail on page 1257.

Iron and Steel Bars.—The price of 3.50c. announced last week on iron bars by the General Committee on Steel and Steel Products of the American Iron and Steel Institute does not affect the Pittsburgh district to any great extent. There are only two iron bar mills in this district, and they are sold up for some months ahead on iron bars at prices much higher than 3.50c. On steel bars, consumers claim they are unable to find mills that are able to sell at the Government price at 2.90c., being sold up for some months. The Government has been a heavy buyer of iron and steel bars for some months, and deliveries to domestic consumers on contracts are only fairly satisfactory. We now quote steel bars at 2.90c. and refined iron bars at 3.50c. in carloads f.o.b. mill Pittsburgh.

Nuts and Bolts.—The new discounts on nuts and bolts announced last week by the General Committee on Steel and Steel Products are regarded as eminently fair to makers and consumers alike, and are now being quoted on any new business that the makers are able to take. However, local makers of nuts and bolts are sold up for two or three months ahead, and have very little material to spare for delivery this year. The new discounts now in effect on nuts and bolts are given on page 1267.

Rivets.—Last week the General Committee on Steel and Steel Products announced the price of \$4.65 base, per 100 lb. on large rivets, and this is taken to mean both structural and boiler rivets. This price is \$12 per ton under former prices on structural rivets and \$14 per ton on boiler rivets. The new demand for rivets for general consumers has been very dull for some time, nearly all the new business being placed is either direct or indirect Government work. We now quote structural and conehead boiler rivets at \$4.65 per 100 lb.; base in carloads and larger lots f.o.b. Pittsburgh.

Hoops and Bands.—The Government price of 2.90c. on bands, extras as per the steel bar card, and the price of 3.50c. on hoops are now in effect, but none of the mills rolling steel bands has any material to spare for this year delivery, being filled up for some months on contracts at considerably higher prices. We now quote steel bands at 2.90c., extras as per the steel bar card, and steel hoops at 3.50c. f.o.b. mill Pittsburgh.

Shafting.—The new demand for shafting from automobile builders and screw stock machine trade has fallen off very much, due to the decline in the building of pleasure cars. On the smaller sizes up to 2 in., some makers of shafting are active seeking new orders, but on the larger sizes up to 5 in. are sold up for four to six months. The Government continues to be a very large buyer of shafting. We quote cold rolled shafting at 17 per cent off list f.o.b. Pittsburgh.

Cold Rolled Strip Steel.—Late Tuesday afternoon manufacturers of cold rolled strip steel were advised that the General Committee on Steel and Steel Products of the American Iron and Steel Institute had fixed a base price of \$6.50 per 100 lb. on cold rolled strip steel and \$4.50 on hot rolled. These are the prices submitted by the manufacturers last week that in their opinion would be fair to them and to consumers. About a month ago new extras on strip steel were adopted by the manufacturers and are now standard and in use. We quote cold rolled strip steel at \$6.50 and hot rolled at \$4.50 per 100 lb. f.o.b. Pittsburgh, terms 30 days, less 2 per cent off for cash in 10 days, when sold in quantities of 300 lb. or more.

Railroad Spikes and Track Bolts.—Last week the Government fixed a price of \$5.25 per 100 lb. on base sizes of boat spikes, f.o.b. Pittsburgh, but did not name a price on railroad or small spikes, so that manufacturers are greatly puzzled as to what to quote on these. The new demand for spikes has been very quiet for some time, except for boat spikes, for which the Government direct and indirect demand is very heavy. We quote standard sizes of railroad spikes at 4.50c.; small spikes, 5c., and boat spikes, 5.25c., all f.o.b. Pittsburgh.

Wrought Pipe.—Not much new business is being placed with the mills in iron or steel pipe at the discounts recently adopted, to be in effect for the remainder of this year. None of the pipe mills has any pipe to spare for delivery this year, and some of the larger mills are sold up for nearly a year. The Government is a steady buyer of pipe, but has not placed any large orders recently. Discounts now in effect on black and galvanized iron and steel pipe being quoted by all the mills are given on page 1257.

Boiler Tubes.—The discounts named last week on iron and steel tubes by the General Committee on Steel and Steel Products show a very heavy reduction in prices below those being obtained by any of the mills that were able to make fairly prompt shipment. None of the mills making iron or steel tubes can sell for delivery this year, as all are filled up for some months. Discounts now in effect on iron and steel tubes are given on page 1257.

Old Material.—The local scrap market continues excessively quiet, consumers evidently being covered for some time ahead and not in the market as buyers. Offers of scrap by dealers to consumers at prices \$1 to \$2 per ton lower than the recently fixed Government maximum prices fail to produce business. The restrictions placed by the railroads on shipments of scrap are so severe as to almost prohibit delivery. Dealers believe that the new demand for scrap will soon show betterment. As stocks have been pulled on for so long, they figure that some consumers will soon have to come in the market. No transactions of moment in scrap of any kind are reported in the past week.

Dealers are now quoting for delivery in Pittsburgh and other consuming points that take Pittsburgh freight rates, per gross ton, as follows:

Heavy steel melting scrap, Steubenville, Follansbee, Brackenridge, Monessen, Midland and Pittsburgh, delivered	\$29.00 to \$30.00
No. 1 foundry cast	25.00 to 26.00
Rerolling rails, Newark and Cambridge, Ohio, Cumberland, Md., and Franklin, Pa.	30.00 to 31.00
Hydraulic compressed sheet scrap.	21.00 to 22.00
Bundled sheet scrap, sides and ends, f.o.b. consumer's mill, Pittsburgh district	20.00 to 21.00
Bundled sheet stamping scrap.	18.00 to 19.00
No. 1 railroad malleable stock.	22.00 to 23.00
Railroad grate bars.	15.00 to 16.00
Low phosphorus melting stock.	37.00 to 38.00
Iron car axles	40.00 to 41.00
Steel car axles.	40.00 to 41.00
Locomotive axles, steel.	47.00 to 48.00
No. 1 busheling scrap.	21.00 to 22.00
Machine-shop turnings.	18.00 to 20.00
Cast-iron wheels	28.00 to 30.00
Rolled steel wheels.	32.00 to 33.00
*Sheet bar crop ends.	32.00 to 33.00
Cast-iron borings	18.00 to 20.00
No. 1 railroad wrought scrap.	33.00 to 35.00
Heavy steel axle turnings.	21.00 to 22.00
Heavy breakable cast scrap.	21.00 to 22.00

*Shipping point.

Coke.—Since the \$7 on 72 hr. foundry coke was announced by the Government it is surprising how many small coke producers there are that are making nothing but foundry coke. When asked whether they have any furnace coke to sell for prompt shipment, their invariable reply is they are making only foundry coke and can share a limited amount for prompt shipment at \$7 per net ton at oven. Another practice common among some coke producers is that they have dated contracts back for some months, which they claim were taken at higher than the Government prices. The course pursued by some of the smaller coke producers since the Government fixed prices is very severely condemned. On the other hand, some of the larger coke operators are filling promptly their obligations on furnace coke at \$6 and foundry at \$7 and say they will continue to do so. The shortage of labor in the coke regions is cutting down output very much, practically none of the coke works being able to make more than a five-day output. The supply of cars last week was bad, some days being as low as 20 per cent of normal. We quote furnace coke at \$6; foundry coke, \$7, and crushed coke over 1 in. size, \$7.30, all in net tons of 2000 lb., all oven. The *Connellsville Courier* gives the output of coke in the upper and lower Con-

nellsville regions for the week ending Nov. 10 as 315,808 tons, a decrease from the previous week of 13,615 tons.

Chicago

CHICAGO, Nov. 19.

The market continues its progress toward a status that makes for greater peace of mind for both buyers and sellers. Inquiries for miscellaneous steel products are reaching the mills in increased volume and specifications are more active, although it is more true than ever that the Government, directly or indirectly, is taking the bulk of production, and that plates, shapes and bars are difficult to procure, bars being easier than shapes and plates, although an Eastern mill is offering some of the latter. The leading local independent undoubtedly will take 4000 tons of plates and shapes which the Emergency Fleet Corporation wants delivered in the Chicago district at the rate of 1500 tons a month, beginning Dec. 1. It is expected that 20,000 tons of sheets, probably blue annealed, will be distributed this week. Deliveries of standard section rails to railroads are very much behind with some makers, and there is but little hope of a betterment in this direction. The jobbers in iron and steel have revised their quotations to conform with agreed prices, the reductions being substantial, plates, for example, dropping from 7c. to 4.45c., structural material from 5c. to 4.20c. and bars from 4.50c. to 4.10c. The new mill price of 3.50c. for common iron bars is regarded as satisfactory, but recognized as a price that will not live when steel bars can be obtained at 2.90c. The makers of rail carbon bars are more or less at sea and would like to see the price of their product adjusted. The demand for small and medium sized lots of prompt pig iron is lively, indicating that contract deliveries are not up to par. Requirements which eventually must result in good buying are being measured by the sellers of iron, but consumers show a tendency to wait, evidently in the hope that there will be further revision of prices and again downward. A shortage in scrap appears to be developing, country mixed being especially scarce. Cast scrap shows a higher trend. The leading local independent has been taking heavy melting and shoveling steel at \$29 and \$28 respectively. If a shortage comes it is believed the East will suffer more than the West, inasmuch as much of the material that ordinarily goes East will be retained here.

Ferroalloys.—Quotations are unchanged with 80 per cent ferromanganese at \$250 for delivery this year or in the early part of next. Standard 50 per cent ferrosilicon is offered by one interest at \$163 for November and December, and at \$150 for next year, and another maker quotes \$155 to \$165 for 1918 delivery of carload lots. Prompt lots of Bessemer ferrosilicon is in fair demand, but not easily obtainable. Blast furnace 10 per cent is quoted at \$22 over base, or \$55, although \$85 is asked for 10 to 12 per cent electrolytic ferrosilicon, running low in sulphur and phosphorus.

Pig Iron.—Demand for small lots of various grades of prompt iron aggregates several thousand tons, and the character of the inquiry indicates that shipments against contracts are not being made as fully as scheduled. The gray iron inquiry calls largely for high silicon and high manganese. Considerable inquiry is coming out also for the silveries, which are hard to get, but obtainable in small quantities. Dealers are finding it easier to do business because of the increased number of odd lots turning up here and there. Recent basic requirements emanating from St. Louis are understood to have been filled. Belief on the part of some consumers that prices may be revised at the end of the year is causing them to hold back the placement of considerable quantities for which definite inquiry has not yet been formulated. Some have expressed disappointment over the fact that they cannot get Southern iron at a price approximating that for Northern, and it is unlikely that they will be able to do so until something like competition between the Northern and Southern products is restored. At present there are enough willing to pay \$37 for Southern iron, or \$33, Birming-

ham, plus \$4 freight, to make it unnecessary for the producers to drop below the Government maximum of \$33, furnace, but this will be changed when they find it necessary to seek buyers. The following quotations are for iron delivered at consumers' yards, except those for Northern foundry, malleable Bessemer and basic irons, which are f.o.b. furnace, and do not include a switching charge averaging 50c. per ton:

Lake Superior charcoal, Nos. 2 to 5.....	\$37.50
Lake Superior charcoal, No. 6 and Scotch.....	40.00
Northern coke foundry, No. 1.....	32.50
Northern coke foundry, No. 2.....	33.00
Northern coke foundry, No. 3.....	32.50
Northern high-phosphorus foundry.....	33.00
Southern coke No. 1 foundry and 1 soft.....	28.50
Southern coke No. 2 foundry.....	37.00
Malleable Bessemer.....	32.50
Basic.....	33.00
Low-phosphorus (copper free).....	33.00
Silvery, 7 per cent.....	44.50

Plates.—Most of the mills continue to assert they have no plates to offer, but sales have been made by an Eastern producer on the basis of 3.25c., plus extras. The leading independent producer is expected to take 4000 tons of plates and shapes for delivery in the Chicago district at the rate of 1500 tons a month, beginning Dec. 1. The jobbers have fallen in line with the agreed prices for material out of warehouse which were announced last week, and quote the Government mill price of 3.25c., plus \$1 per 100 lb. and the freight rate from Pittsburgh, which they figure at \$4 per ton. (Actual freight at 21.5c. per 100 lb. is \$4.30 per ton.)

For material out of warehouse, the quotation is 4.45c. as against 7c. a week ago.

Structural Material.—As noted, shapes as well as plates are included in an order for 4000 tons to be placed by the Emergency Fleet Corporation for delivery in the Chicago district. Local makers are not offering any shapes, and if obtained at all for non-governmental uses, they probably would come from one or two Eastern mills, and it is a question how eager they are to sell at 3c. The large building for Butler Bros., Chicago, which will require about 9000 tons, remains pending. The largest letting for many months consists of 3500 tons just placed for a power house for the Kansas City Light & Power Co., Kansas City, Mo., which went to the American Bridge Co. The Union Foundry Works will supply 130 tons for a building to be erected for the Stewart Mfg. Co., Chicago, and an unknown bidder 144 tons for a gantry crane for the Northern Central Railroad Co. at Baltimore, Md.

For material out of warehouse the quotation is 4.20c.

Bars.—While steel bars are not as tight as plates or shapes, not much is coming to light in the way of actual transactions at 2.90c., the agreed price. It is expected that a price for rail carbon bars will be fixed in the course of a few days, some of the trade believing it will settle around 3.50c., Chicago, the price fixed for common iron bars. Recent sales made by an Eastern mill at 2.90c., Pittsburgh, were equivalent to 3.40c., Chicago, and 3.50c. was quoted by Western makers in competition. Business in rail carbon steel has been exceedingly slow, consumers preferring to await a definite decision as to price. The new price for common iron bars—3.50c.—governed by the usual extras and established custom as regards delivery points, is regarded as satisfactory, but the makers recognize that this price will not hold when mild steel bars at 2.90c. become easily obtainable. Common bar iron usually sells below the level of mild steel bars, a contingency of which there seems to be no immediate prospect. The jobbers have revised their prices.

We quote warehouse prices for Chicago delivery as follows: Soft steel bars, 4.10c.; bar iron, 4.10c.; reinforcing bars, 4.10c.; base, with 5c. extra for twisting sizes $\frac{1}{2}$ in. and over and usual card extras for smaller sizes; shafting, list plus 10 per cent.

Sheets.—It is expected that the Government, early this week, will distribute 20,000 tons of sheets, probably blue annealed. Orders at fixed prices are being booked by the mills to an extent double the rate of production, with very little of it directly from the Government, and the indications are that the mills will

soon be fixed. Some of them are taking contracts for sheets, others are not, demanding that specifications for the first quarter be filed with the order. We quote Government mill prices as follows: No. 28 black sheets, 5c.; No. 10 blue annealed, 4.25c., and No. 28 galvanized, 6.25c., all Pittsburgh base. To these prices jobbers add \$1 per 100 lb. for blue annealed, No. 16 and heavier; and \$1.25 for one pass cold rolled sheets, No. 18 and lighter, and for galvanized, also freight from Pittsburgh.

We quote for Chicago delivery out of stock, regardless of quantity, as follows: No. 10 blue annealed, 5.45c.; No. 28 black, 6.45c. and No. 28 galvanized, 7.70c.

Wire Products.—The recent fixing of prices by agreement released a lot of business, and the market has been more active. We quote as follows per 100 lb. to jobbers:

Nails, \$3.50, Pittsburgh; plain fence wire, \$3.25; painted barb wire, \$3.65; galvanized barb wire, \$4.35; polished staples, \$3.65, and galvanized staples, \$4.35.

Rails and Track Supplies.—Deliveries of standard section rails are dragging, and it is difficult to see how they can be bettered, considering the pressure on the mills from the Government. We quote:

Standard railroad spikes, 4.50c. to 5c., base; small spikes, 4.75c. to 5.50c., base; track bolts with square nuts, 5.50c. to 6c., all in carloads, Chicago; tie plates, \$70 to \$90 f.o.b. mill, net ton; standard section Bessemer rails, Chicago, \$38; base (nominal); open hearth, \$40 (nominal).

Bolts and Nuts.—Following the official fixing of prices at lower levels, business has been appearing at a rate that may swamp the makers, some of whom complain they cannot get sufficient raw material. The volume of delayed business exceeds the supply, and it is considered not a remote possibility that prices may react. For prices and freight rates see finished iron and steel, f.o.b. Pittsburgh, page 1267.

Cast-Iron Pipe.—The only reported letting in prospect is one of 167 tons at Jackson, Mich., Nov. 26. That the market should be quiet at this time is seasonable. Quotations are unchanged.

Quotations per net ton, Chicago, are as follows: Water pipe, 4 in., \$58.50; 6 in. and larger, \$55.50, with \$1 extra for class A water pipe and gas pipe.

Old Material.—There is no overabundance of scrap and the market is strong. Country mixed is especially scarce, and cast scrap shows a higher trend. The yards are short of sufficient country mixed to keep their shears in full operation. Buying has been done in better volume, the leading independent steel mill taking a considerable tonnage of heavy melting at \$29 and shoveling at \$28. The L. E. & W. R. R. is offering 800 tons of rerolling rails, the Erie wants bids on a blank list, and the C., M. & St. Paul is closing to-day on a list of ordinary size. The railroad lists are few and light. We quote for delivery at buyers' works, Chicago and vicinity, all freight and transfer charges paid, as follows:

Per Gross Ton	
Old iron rails	\$35.00 to \$36.00
Relaying rails	50.00 to 55.00
Old carwheels	30.00 to 31.00
Old steel rails, rerolling	35.00 to 36.00
Old steel rails, less than 3 ft.	33.50 to 34.50
Heavy melting steel scrap	28.00 to 29.00
Frogs, switches and guards, cut apart	28.00 to 29.00
Shoveling steel	27.00 to 28.00
Steel axle turnings	20.00 to 21.00

Per Net Ton	
Iron angles and splice bars	\$34.00 to \$35.00
Iron arch bars and transoms	35.00 to 36.00
Steel angle bars	26.00 to 27.00
Iron car axles	42.00 to 43.00
Steel car axles	40.00 to 41.00
No. 1 railroad wrought	31.00 to 32.00
No. 2 railroad wrought	28.50 to 29.50
Cut forge	28.00 to 29.00
Pipes and flues	21.00 to 22.00
No. 1 busheling	23.00 to 24.00
No. 2 busheling	16.00 to 17.00
Steel knuckles and couplers	29.00 to 30.00
Coil springs	36.50 to 37.50
No. 1 boilers, cut to sheets and rings	18.50 to 19.50
Boiler punchings	31.00 to 32.00
Locomotive tires, smooth	32.00 to 33.00
Machine-shop turnings	16.00 to 17.00
Cast borings	16.00 to 17.00
No. 1 cast scrap	23.00 to 24.00
Stove plate and light cast scrap	18.00 to 19.00
Grate bars	17.00 to 18.00
Brake shoes	18.00 to 18.50
Railroad malleable	26.00 to 27.00
Agricultural malleable	23.00 to 24.00
Country mixed scrap	18.00 to 19.00

Philadelphia

PHILADELPHIA, Nov. 20.

Coal and coke shortage and railroad congestion are substantially restricting blast furnace and mill output in the eastern Pennsylvania district. A nearby mill had seven of its 12 open-hearth furnaces out of use to-day because of shortage of gas coal, and one of its blast furnaces was banked for lack of coke. A plate mill which requires 18 carloads of gas coal per day has been receiving about 75 per cent of this quantity, and as a consequence is operating at greatly reduced capacity. These are typical instances of the troubles which are besetting the iron and steel industry. Steel mills which are self-contained in coal and coke supply are not having as serious difficulties, their principal trouble being to get sufficient cars to bring coal from the mines to their coke ovens. Congestion of freight at the city of Baltimore is so great that the Baltimore & Ohio Railroad has issued a general embargo against shipments both to seaboard and to the interior. The Philadelphia yards are seriously congested also and the railroads have been putting on special embargoes for a few days at a time to relieve the situation. There has been another active week in the pig iron market, with sales of basic iron totalling more than 25,000 tons, the largest single sale reported being 5000 tons. A fair total of small tonnages of foundry iron has also been booked. As offerings of finished steel for prompt delivery have become freer, buyers holding contracts at high prices, particularly for plates and shapes, have found it possible to pick up sufficient steel to last them until the first of the year, and cancellation of the high priced contracts has resulted in a number of instances.

Pig Iron.—A continued active inquiry for basic iron, with sales totalling 25,000 tons or more, was the feature of the Philadelphia iron market during the past week. A structural mill took 5000 tons for first quarter. A bridge company bought an additional 3000, making its purchases in the past two weeks at least 8000 tons in this market, all for prompt delivery, and a Philadelphia tin plate company bought 4500 tons of off basic. Another lot of 2500 tons and one of 900 tons make a total of nearly 16,000 tons sold by one office. Another sales office had total sales of 11,500 tons of basic during the week. Still another office sold 3000 to 4000 tons of various grades of iron, mostly foundry and special iron. Total sales for the past week have undoubtedly exceeded 30,000 tons. Only a few thousand tons was for prompt delivery, the remainder for first quarter. More than 1000 tons of low phosphorus iron was sold. A cast-iron pipe foundry came into the market for 5000 tons of foundry iron. The Norfolk & Western Railroad has placed orders for 2000 tons of special analysis iron and 1800 tons of foundry iron. The Pennsylvania Railroad Co. is reported to have closed for about 13,000 tons recently inquired for. We quote the following standard grades at furnace, the freight to destination to be added:

Eastern Penna. No. 1 X	\$34.50
Eastern Penna. No. 2 X	33.50
Eastern Penna. No. 2 foundry	33.00
Virginia No. 2 X	33.50
Virginia No. 2 foundry	33.00
Basic	33.00
Gray forge	32.00
Bessemer	26.30
Standard low phosphorus	53.00
Low phosphorus (copper bearing)	50.00

Coke.—Shortage of coke for prompt delivery is causing serious trouble among Eastern blast furnaces, several of which are banked. The Eastern Steel Co. and the Alan Wood Iron & Steel Co. each has a blast furnace banked. Some of the coke which furnaces are receiving is of such poor quality that it is causing frequent scaffolding, with increased output of off iron. One furnace has remedied the trouble at considerable expense by screening all of its coke before putting it into the furnace. Two large Eastern sellers of coke are now contracting ahead, one for the first half of next year and the other for the second half. Sales are being made, however, only to regular customers. A provision has been inserted in some contracts that in case of an increase in price before delivery of the coke the buyer shall pay the higher price, but if the

price is reduced the contract shall remain undisturbed; in other words, the buyer takes all the risk. We quote blast furnace coke at \$6, ovens, and 72-hr. foundry coke at \$7, ovens.

Ferroalloys.—There is no buying of ferromanganese for next year. Sales for prompt delivery are mostly in carload lots. The market is quoted by sellers at \$250 for any delivery, but sales are being made below this figure. At least one carload was sold last week at \$235. The market for spiegeleisen is also weaker, the price generally quoted ranging from \$60 to \$65 at furnace.

Billets.—Consumers are making urgent inquiries for open-hearth rerolling billets for first quarter requirements. As yet no sales have been made, but a leading eastern Pennsylvania producer will soon make contracts with its regular customers. A large Eastern producer is prepared to take on a fair tonnage of Bessemer rerolling billets.

Rails.—An Eastern mill will accept orders for Bessemer rails with fairly prompt deliveries.

Sheets.—Several large contracts for blue annealed sheets for first quarter delivery have been placed during the past week. One lot was 1500 tons and another 1000 tons. Orders aggregate several thousand tons. Mills will accept less than carload orders at 50c. per 100 lb. above the Government base prices, and it appears as if warehouses might not find it easy to charge a differential of \$1 or \$1.25 per 100 lb., as permitted under the scale of agreed prices adopted last week. We quote No. 10 blue annealed at 4.25c., No. 28 black at 5c. and No. 28 galvanized at 6.25c., base, Pittsburgh.

Structural Material.—Several small tonnages for civilian work have been sold in the past week at the Government price, with fairly prompt deliveries. Several thousand tons will be required for additional shops at the American International Shipbuilding Corporation's Hog Island shipyard. The Government will place an order soon for a foundry building at the Washington Navy Yard. We quote mill price on shapes at 3c., base, Pittsburgh. Warehouses will now sell shapes at 4.185c., Philadelphia.

Plates.—Several mills will soon begin to accept contracts, principally from regular customers, for first quarter delivery. There is a freer sale of sheared plates for prompt delivery. Buyers have been able to satisfy their immediate requirements and in some instances have cancelled contracts made at the high prices. Some of the mills which accepted orders for plates for the first 25 ships to be built by the American International Shipbuilding Corporation agreed also to fabricate plates and shapes into standardized boat sections. Production of plates is being curtailed by shortage of gas coal for open-hearth furnaces. The Italian Government order of ship plates has been increased from 15,000 to 22,000 tons. We quote mill prices at 3.25c., base, Pittsburgh, and warehouse prices at 4.435c., Philadelphia.

Iron and Steel Bars.—Fixing of a price for iron bars at 3.50c., base, Pittsburgh, was followed promptly by sales at that figure, though no large tonnages have been taken, as mills are well sold up for this year. A meeting of the Eastern Bar Iron Institute will be held Thursday, when it may be decided to accept first quarter orders at the new price. We quote bar iron at 3.685c., Philadelphia. Steel bar makers may soon accept contracts for first quarter. There is very little business being done for this year. Concrete reinforcing bars are in good demand both for domestic and export trade. We quote steel bars at 2.90c., base, Pittsburgh, from mill and at 4.085c., Philadelphia, from warehouse.

Tin Plate.—A leading Pittsburgh producer is selling heavily for first half shipment at \$7.75 per base box, Pittsburgh. Contracts are being made with regular customers only, and all contracts are subject to cancellation on Government order.

Wire Products.—Wire and wire nail orders in fairly large volume have been booked by leading independents at \$3.25 and \$3.50, respectively, per 100 lb. There has been a good demand for cement coated nails.

Old Material.—Further restriction on shipments of iron and steel scrap will probably be announced soon

by the railroads. The American Board of Scrap Iron Dealers, Widener Building, Philadelphia, has obtained an official ruling from Washington that the recent priority order issued by Judge Lovett of the War Industries Board does not discriminate against the shipment of scrap in open cars, providing the consignee is engaged on essential war work. Scrap iron was not specifically mentioned in the order, but the privilege of using open cars was accorded to all raw materials used in the metal industries when required for war work. Some local agents of railroads construed the order otherwise and confusion resulted. All that it is necessary to do is to produce the consignee's Government order number or make affidavit that the shipment is for essential war work. One dealer here uses the following phrase on all bills of sale: "It is understood and agreed that the above material is to be used in connection with the manufacture of essentials as is or may be specified by the authorities." Prices show firmness and in the case of old carwheels and No. 1 cast there has been an advance of \$3 and \$1 respectively. There is a fair demand from mills in the Pittsburgh district. An Eastern Pennsylvania plate mill is offering \$27, delivered, for No. 1 heavy melting steel. At this price dealers can sell more profitably in the Pittsburgh district. The freight from New England points to eastern Pennsylvania is now \$2.42, while to the Pittsburgh district it is \$3.60, only \$1.18 additional, and the prices being paid in the Pittsburgh district are higher than are offered here. Dealers are watching with interest for sales of iron and steel scrap by producers, such as the railroads. Under the method adopted of fixing prices on only four classifications of scrap, there will be plenty of opportunities for producers and dealers to violate the fixed price schedule, if they choose to do so. In the opinion of some in the trade, further price fixing must come, covering all of the classifications. A few dealers construe the price-fixing arrangement to apply only to sales to the iron and steel trade. They do not understand that there is any restriction on sales of cast borings, for example, to chemical plants. Such borings, which are so fine as to be of a special character, have been sold at \$24 since the price for cast borings was fixed at \$20. We quote for delivery at consuming points in the Philadelphia district the following prices:

No. 1 heavy melting steel	.....	\$26.00 to \$28.00
Steel rails, rerolling	.....	38.00 to 40.00
Low phosphorus heavy melting	.....	36.00 to 38.00
Old iron rails	.....	38.00 to 40.00
Old carwheels	.....	33.00 to 35.00
No. 1 railroad wrought	.....	35.00
No. 1 forge fire	.....	22.00 to 23.00
Bundled sheets	.....	22.00 to 23.00
No. 2 busheling	.....	15.00 to 16.00
Steel turnings (for blast furnace use)	.....	15.00 to 16.00
Machine shop turnings (for rolling mill use)	.....	18.00 to 19.00
Cast borings (for blast furnace use)	.....	15.00 to 16.00
Cast borings (clean)	.....	20.00
No. 1 cast	.....	31.00 to 33.00
Grate bars	.....	21.50 to 22.50
Stove plate	.....	22.00 to 23.00
Railroad malleable	.....	30.00 to 32.00
Wrought iron and soft steel pipes and tubes (new specifications)	.....	30.00 to 32.50

Buffalo

BUFFALO, Nov. 19.

Pig Iron.—On account of reduced furnace output due to some of the stacks shutting down because of lack of coke, coupled with the fact that furnaces had already taken on heavy forward commitments during the past two weeks, furnace bookings for the past week have been comparatively light. There appears to be very little available tonnage to be contracted for for shipment prior to April 1 of next year, with a strong probability of curtailment of capacity output for the second quarter on account of slowing up caused by shortage in coke supply. Consequently, producers, taking into consideration the limited untaken tonnage for first half, are disposed to give first attention to caring for the needs of their regular customers and are less disposed to cater to the demand that comes in from miscellaneous buyers who have had no regular furnace affiliation. At least three furnaces of the district are out of commission on account of coke shortage.

Furnace shipments on contracts are being seriously retarded on account of inability to obtain adequate supply of cars. We continue to quote the same schedule of prices which has been in force for the past three weeks, which is as follows, f.o.b. furnace, Buffalo:

No. 1 foundry	\$34.50
No. 2 X	33.50
No. 3 foundry	32.50
Gray forge	32.00
Malleable	33.50
Basic	33.00
Lake Superior charcoal, f.o.b. Buffalo.....	39.75

Finished Iron and Steel.—Orders for materials to be used for Government purposes continue to be of large volume, and the demand for material for other uses is commencing to be met a little more freely and with more favorable consideration by sellers. Since Nov. 16 warehouse prices have been quoted as follows, f.o.b. Buffalo: Steel bars, 4.05c. base; iron bars, 4.65c.; shapes and structural material, 4.15c.; plates, 4.40c.; No. 10 blue annealed sheets, 5.40c.; one pass cold rolled black sheets No. 28 base, 6.40c.; No. 28 galvanized sheets, 7.65c. The Schoellkopf Aniline & Chemical Works, Inc., Buffalo, has awarded the contract for the construction of building No. 80 of its new plant on Buffalo River, requiring 300 tons of structural steel, to the John W. Cowper Co., Buffalo. About 1500 tons of steel, largely reinforcing bars, will be used in the construction of Victory Plant No. 2 now building in Buffalo by the Fore River Shipbuilding Corporation of the Bethlehem Shipbuilding Corporation for the manufacture of steam turbines for destroyers for the United States Navy.

Old Material.—Evidences of an appreciable general buying movement are apparent. Inquiry is of large volume, and the market is strong. Demand is especially good for heavy melting steel, old car wheels, borings and turnings, both locally and from eastern Pennsylvania and Pittsburgh districts. Yard stocks, which are now low, are also being replenished. Dealers are hindered in deliveries on contracts by the continued and growing shortage of cars in which to forward shipments, owing to the increasing demand for cars in which to forward finished materials on Government orders, and dealers are afraid this condition will grow more acute. There has been no change in prices, and we repeat last week's schedule of dealers asking prices as follows, per gross ton, f.o.b. Buffalo:

Heavy melting steel	\$29.00 to \$30.00
Low phosphorus	36.00 to 38.00
No. 1 railroad wrought	34.00 to 35.00
No. 1 railroad and machinery cast	27.00 to 28.00
Iron axles	45.00
Steel axles	45.00
Car wheels	30.00 to 31.00
Railroad malleable	28.00 to 29.00
Machine shop turnings	18.00 to 18.50
Heavy axle turnings	25.00 to 26.00
Clean cast borings	19.00 to 20.00
Iron rails	37.00 to 38.00
Locomotive grate bars	20.00 to 21.00
Stove plate	20.00 to 21.00
Wrought pipe	26.00 to 27.00
No. 1 busheling scrap	25.00 to 26.00
No. 2 busheling scrap	17.00 to 18.00
Bundled sheet stamping scrap	19.00 to 20.00

Cleveland

CLEVELAND, Nov. 20.

Iron Ore.—There has been some feeling of anxiety over the ore situation, but fears of a shortage before the opening of the next season of navigation have about been dispelled by better weather conditions this month and a very satisfactory movement of ore. This fear was at least partly due to the falling off in shipments during September and October. Weather conditions so far in November have been unusually good for this time of the year, and ore shipments continue heavy. It is now predicted that the Lake shipments for the season will come close to 62,000,000 tons. The amount of ore on dock at the close of navigation will be about the same as last year. On Nov. 1 there was 8,823.170 gross tons on Lake Erie docks as compared with 8,793,586 tons on the same date a year ago. Shipments from the docks to interior furnaces up to Nov. 1 amounted to 31,217,010 tons as compared with 32,568,772 tons during the corresponding period of 1916. We quote prices as follows, delivered lower Lake ports: Old range Bessemer, \$5.95; old range non-Bessemer, \$5.20; Mesaba Bessemer, \$5.70; Mesaba non-Bessemer, \$5.05.

Pig Iron.—Some foundry iron has been sold for delivery during the last half of next year. Several inquiries have come out for that delivery recently, but most furnaces have declined to take orders for shipment beyond July. The last half business was booked at the Government price and was taken in connection with the first half tonnage. The demand for foundry iron for the first half in lots of 100 to 500 tons is fairly heavy and producers not well sold up are booking considerable business. A Cleveland company is in the market for 2000 tons of either No. 1 or No. 2 foundry iron, and a nearby stove company is inquiring for 2000 tons of Northern, Southern and silvery irons, both inquiries being for first half delivery. In steel making iron one inquiry is out for 5000 tons of basic iron for prompt shipment, and a Northern Ohio consumer has purchased about 5000 tons of basic for the second quarter and wants 10,000 to 15,000 tons additional for the same delivery. The Southern iron market is quiet. Producers are unable to sell in this territory at the Government price, with freight added, except to consumers who must have Southern iron in their mixture. Some consumers look for lower prices on Southern iron so that it will come in competition with Northern grades. We quote, delivered Cleveland, as follows:

Bessemer	\$37.25
Basic	33.30
Northern No. 2 foundry	33.30
Southern No. 2 foundry	37.00
Gray forge	32.30
Ohio silvery, 8 per cent silicon	46.12
Standard low phos., Valley furnace	50.00

Coke.—The scarcity of foundry coke for prompt shipment continues, and at the suggestion of the Government one Cleveland interest is furnishing some by-product coke to foundries in this territory; but the supply from this source is very limited. Sales of this coke are being made at \$8.75 at oven, which is equivalent to \$7, Connellsville. There is considerable inquiry for foundry coke, and some contracts are being closed at \$7 per net ton at oven for the first half and all of next year.

Finished Iron and Steel.—The demand for finished steel for Government work continues heavy, but very little inquiry is coming out for material for other purposes. There is a great deal of inquiry for plates, including one for 20,000 tons of 3/16 in. gage in 30-in. squares for the Government. Plate prices quoted by mills able to make early shipments that have been getting higher than the Government price continue to ease off, and a Cleveland mill is now quoting a maximum of 5c. as compared with 6c. a week ago. The Toledo Bridge & Crane Co. is inquiring for 1000 tons of plates and shapes for work in connection with the Emergency Fleet Corporation. Some mills that have stocks of high-priced scrap complain that they will suffer a loss by selling iron bars at the 3.50c. price fixed by the Government. Hard steel bars, the price of which has not been regulated by the Government, are still quoted around 3.50c. at mill. There is a heavy volume of inquiry for sheet bars, many mills being in the market for first quarter contracts. The demand for sheets has been very active since the Government prices were announced, and some of the mills have sold out entirely for this year and are taking first quarter contracts at Government prices. The price of tool steel has not been regulated by the Government, but there is some expectation that a Government price will be named on this steel, which is generally quoted at \$2.50 per lb., but this price is being shaded to \$2.25 to \$2.35. The Government regulation of warehouse prices has left an uncertainty as to whether Cleveland warehouses are to quote f.o.b., Cleveland, or f.o.b., Pittsburgh warehouse, for shipments to points outside of the city. With Cleveland as a basing point, the freight from Pittsburgh to this city would be added. The point has been raised also as to giving buyers from warehouse the advantage of the odd cents. Steel bars figure out at 4.03½c. at Cleveland warehouse, under the Government price, with freight from Pittsburgh added, but 4c. quotations are now being made. Other warehouse prices are 4.10c. for structural material; 4.35c. for plates; 5.35c. for blue annealed sheets; 6.36c. for black sheets, and 7.60c. for galvanized sheets, these giving the buyer the advantage of the odd ¾c. per 100 lb.

Jobbers may yet decide to retain this fraction.

Bolts, Nuts and Rivets.—Now that the Government prices are fixed, a heavy volume of buying is expected in bolts, nuts and rivets, the placing of a large number of orders having been held up recently waiting for the readjustment of prices by the Government. Manufacturers are generally satisfied with the new prices, although they express some concern about getting all the steel they will need. Many inquiries are coming out for bolt and nut contracts. Makers will take contracts at the new prices through the first quarter and possibly the first half. Under the Government prices the large buyer will no longer enjoy the advantage he has generally been able to obtain over the small consumer. Inquiries are pending for a large tonnage of rivets, among them being a new inquiry for 2000 or 3000 tons for the Emergency Fleet Corporation. Under the Government price makers are permitted to charge the usual 10c. extra for boiler rivets. We quote rivets at 4.65c. for structural and 4.75c. for boiler rivets.

Old Material.—Trading is almost entirely between dealers who are still buying to cover short sales. The market has stiffened up somewhat on heavy melting steel scrap. Dealers are paying \$28.50 to \$29, and sales have made as high as \$30. On other grades regulated by the Government the Cleveland prices remain well below those of the Government. Dealers are asking consumers \$30 for heavy melting steel, but mills are still out of the market. Sales of railroad wrought scrap are reported at \$33 per gross ton, and borings have sold in this market at \$20 gross for delivery in Pittsburgh. Borings are quiet, but turnings are in fair demand and about 25c. a ton higher. Cast scrap is very quiet, as foundries are well supplied. We quote, f.o.b. Cleveland, as follows:

Per Gross Ton	
Steel rails	\$26.00 to \$27.00
Steel rails, rerolling	36.00 to 37.00
Steel rails, under 3 ft.	30.00 to 31.00
Iron rails	35.00 to 36.00
Steel car axles	45.00 to 46.00
Heavy melting steel	28.00 to 29.00
Carwheels	26.50 to 27.50
Relaying rails, 50 lb. and over	50.00 to 60.00
Agricultural malleable	22.00 to 23.00
Railroad malleable	27.00 to 28.00
Steel axle turnings	31.00 to 32.00
Light bundled sheet scrap	20.00 to 20.50
Per Net Ton	
Iron car axles	\$44.00 to \$45.00
Cast borings	16.75 to 17.25
Iron and steel turnings and drillings	16.50 to 17.00
No. 1 busheling	22.00 to 23.00
No. 1 railroad wrought	30.00 to 31.00
No. 1 cast	23.00 to 23.50
Railroad grate bars	17.25 to 17.75
Stove plate	17.25 to 17.75

Cincinnati

CINCINNATI, Nov. 20—(By Wire).

Pig Iron.—The shortage of No. 2 foundry iron is becoming more serious, especially in the Hanging Rock and Virginia districts. No Southern Ohio or Virginia foundry iron is offered for this year's shipment with the exception of an occasional cast and this does not stay on the market as a rule longer than 24 hours. In the South, the situation is almost identical, although there is more standard iron available in that district, but most of it is offered only for next year's shipment. A few sales have been made of Southern iron for first half delivery, among which is one for 500 tons of No. 3 iron to a Cincinnati foundry. Another 500 ton sale of No. 2 was to a nearby melter and numerous smaller contracts were closed, all at the Government's prices. Some Southern iron was sold in Central Ohio for last half of 1918 at the present ruling base price of \$33 furnace with the silicon analysis ranging from 1.75 to 2.25 per cent. Iron higher than this and which is within the sulphur limit commands an advance according to the Government's schedule. The furnaces in nearly all districts are complaining about the inadequate supply of coke and also of its inferior quality. Proportionately more high sulphur iron has been produced lately than at any time heretofore and this is attributed to inferior coke supplied. The Ohio silvery irons are practically off the market and it is almost impossible to place an order for even a carload for December shipment, no matter how badly needed. Malleable is also scarce, but

contracts can be made for next year's shipment with a number of selling companies. Based on freight rates of \$2.90 from Birmingham and \$1.26 from Ironton, we quote, f.o.b. Cincinnati, for 1917 shipment, prices as follows:

Southern coke, No. 2 foundry and 2 soft	\$22.90
Southern Ohio coke, No. 2	24.26
Basic, Northern	34.26

(By Mail)

Finished Material.—The readjustment of warehouse prices has now been completed, but, of course, the time since they went into effect has been so short that little new business is reported as being done at the revised figures. The local warehouse price of steel bars is 4.08c., but there is a somewhat elaborate schedule governing the selling prices on twisted bars, which are quoted as follows: $\frac{3}{4}$ x $1\frac{1}{4}$ in., 4.23c.; $\frac{5}{8}$ -in., 4.33c.; $\frac{1}{2}$ -in., 4.43c.; $\frac{3}{4}$ -in., 4.63c. and $\frac{1}{4}$ -in., 4.88c. Structural shapes from stock are now 4.18c., plates $\frac{1}{4}$ -in. and heavier, 4.43c.; cold rolled shafting is unchanged at 10 per cent above list; No. 10 blue annealed sheets from warehouse stocks are quoted at 5.45c. The mill quotations on sheets are as follows: No. 10 blue annealed, 4.18 $\frac{1}{2}$ c.; No. 28 black, 5.18 $\frac{1}{2}$ c., and No. 28 galvanized 6.43 $\frac{1}{2}$ c. all f.o.b. cars Cincinnati or Newport, Ky. There is a wide range in the jobbers' prices on wire nails and orders from old customers have in some cases been taken at \$4 per keg base, but some jobbers are holding out for \$4.20. As a rule, both nails and barb wire are selling slowly.

Coke.—Operators in the Connellsville district have recently taken on considerable first half foundry coke business and also some for an entire year's supply. These contracts are almost invariably a renewal of old ones and there is no effort to obtain business from new customers. The Government's price of \$7 per net ton, at even, rules in all cases with the understanding that readjustments are to be made later in accord with Government schedules. A few foundry coke contracts have been accepted by Wise County operators on the same basis. Pocahontas and New River producers appear to be still out of the market. No contracts for furnace coke have been made in this territory, and it is extremely doubtful whether any 48-hr. coke could be bought in any producing district for either prompt or future shipment.

Old Material.—The absence of changes in quotations, further than a little stiffening in prices on borings and turnings, denotes conclusively that the demand for scrap is still so light that local dealers have not been able to make the expected adjustments to conform with the Government's schedule. On account of the congested conditions at different large consuming points, embargoes prevent shipments from going forward, and this has caused considerable complaint among dealers. The following are dealers' prices, f.o.b. cars, southern Ohio and Cincinnati:

Per Gross Ton	
Bundled sheet scrap	\$17.50 to \$18.00
Old iron rails	32.00 to 32.50
Relaying rails, 50 lb. and up	44.00 to 44.50
Rerolling steel rails	33.00 to 33.50
Heavy melting steel scrap	25.00 to 25.50
Steel rails for melting	24.50 to 25.00
Old carwheels	27.00 to 27.50
Per Net Ton	
No. 1 railroad wrought	\$29.00 to \$29.50
Cast borings	13.00 to 13.50
Steel turnings	13.00 to 13.50
Railroad cast	13.50 to 13.90
No. 1 machinery cast	24.00 to 24.50
Burnt scrap	13.00 to 13.50
Iron axles	40.00 to 40.50
Locomotive tires (smooth inside)	33.50 to 34.00
Pipes and flues	15.50 to 16.00
Malleable cast	19.50 to 20.00
Railroad tank and sheet	14.50 to 15.00

St. Louis

ST. LOUIS, Nov. 19.

Pig Iron.—Pig iron sales are not numerous in consequence of the inability of representatives of furnaces to make deliveries of the standard grades, but there are some sales being reported of iron differing from the strict analysis and there are also some transactions in charcoal iron reported, the largest being for 500 tons for 1918 delivery. The inquiries continue very heavy from all parts of the St. Louis territory, but are being

filed for consideration when opportunity of delivery appears. No orders are being taken for second half delivery. Prices, of course, as made by the Government are being maintained. Not much first half tonnage is left for local representatives, and the local furnace is about sold up, probably 10,000 tons being the limit of what can be done in addition to the business already on the books.

Coke.—Considerable confusion exists in the coke market, and while there are many inquiries in the market ranging from 1000 tons down there are no sales being made by representatives except to old customers, and then only for 1918 delivery. No spot business is being accepted. By-product coke from local and nearby producers is still out of the market.

Finished Iron and Steel.—In finished products a little easier condition is reported in the delivery of light rails, but on standard sections the situation is growing steadily worse. Spikes are also reported easier in delivery than has been the case for some time. Pressure on the warehouses continues heavy and the supplies are very low. The Government prices were put into effect on Nov. 15, and for stock out of warehouse we quote to-day as follows: Soft steel bars, 4.17c.; iron bars, 4.17c.; structural material, 4.27c.; tank plates, 4.52c.; No. 8 sheets, 5.47c.; No. 10 blue annealed sheets, 5.52c.; No. 28 black sheets, cold rolled, one pass, 6.52c.; No. 28 galvanized sheets, black sheet gage, 7.77c.

Old Material.—The scrap market has scarcely settled down to the Government price readjustment, but is rapidly doing so. Dealers are trading among themselves and doing considerable buying, but the consumers are holding out of the market with a view to getting better prices, if possible. Their yards, however, are pretty low, and there is a general feeling that they will have to enter the market shortly to keep their plants going at full capacity. Dealers generally are holding for the Government maximum and are aided in this by the shortage of cars. We quote dealers' prices, f.o.b. customers' works, St. Louis industrial district, as follows:

Per Gross Ton	
Old iron rails	\$36.00 to \$37.00
Old steel rails, rerolling	37.00 to 37.50
Old steel rails, less than 3 feet	37.00 to 37.50
Relaying rails, standard section, subject to inspection	60.00 to 75.00
Old carwheels	28.50 to 29.00
No. 1 railroad heavy melting steel scrap	28.50 to 29.00
Heavy shoveling steel	26.50 to 27.00
Ordinary shoveling steel	25.00 to 25.50
Frogs, switches and guards cut apart	28.00 to 28.50
Ordinary bundled sheet scrap	18.00 to 18.50
Heavy axle and tire turnings	18.00 to 18.50

Per Net Ton	
Iron angle bars	\$34.50 to \$35.00
Steel angle bars	27.00 to 27.50
Iron car axles	43.00 to 43.50
Steel car axles	41.00 to 41.50
Wrought arch bars and transoms	42.00 to 42.50
No. 1 railroad wrought	30.75 to 31.25
No. 2 railroad wrought	28.50 to 29.00
Railroad springs	31.50 to 32.00
Steel couplers and knuckles	28.50 to 29.00
Locomotive tires, 42 in. and over, smooth inside	31.00 to 31.50
No. 1 dealers' forge	21.00 to 21.50
Cast iron borings	16.50 to 17.00
No. 1 busheling	23.00 to 23.50
No. 1 boilers, cut to sheets and rings	18.50 to 19.00
No. 1 railroad cast scrap	22.00 to 22.50
Stove plate and light cast scrap	17.00 to 17.50
Railroad malleable	25.50 to 26.00
Agricultural malleable	21.00 to 21.50
Pipes and flues	21.00 to 21.50
Heavy railroad sheet and tank scrap	19.50 to 20.00
Railroad grate bars	18.00 to 18.50
Machine shop turnings	16.50 to 17.00
Country mixed scrap	17.50 to 18.00
Plant mixed railroad scrap	21.00 to 21.50

British Steel Market

No Demand for American Crude Steel—Readjustment of Iron Prices Deferred

(By Cable)

LONDON, ENGLAND, Nov. 21.

Official adjustment of pig iron prices, due to advance in coal and coke, has been deferred. There are rumors that producers are being subsidized. The stringency in

hematite iron is unrelieved. American semi-finished steel is lifeless. Finished steel bars have sold at £24, f.o.b. New York. The demand for ferromanganese is improving and Canada has paid \$275, c.i.f., for forward shipment. Tin plates are active, chiefly on French account, 30s. 10½d., net basis, having been paid. We quote as follows:

Tin plates, coke, 14 x 20; 112 sheets, 108 lb., f.o.b. Wales, 30s. 10½d.
Ferromanganese, £15 nominal.
Ferrosilicon, 50 per cent. c.i.f., £35 upward.
On other products control prices are as quoted in THE IRON AGE of July 19, p. 171.

(By Mail)

Coal and Coke Advances May Affect All Maximum Prices—Ferromanganese Easier

LONDON, ENGLAND, Nov. 6.—The steel industry is under the influence of increased working costs while the pressure of war work is more intense than ever. A fortnight ago reference was made to the advance of 2s 6d per ton in coal as foreshadowing a revision of the maximum prices for pig iron and finished products and the rumors since of an advance of 6s 3d in coke appear to have some foundation. At any rate, such an advance is now regarded as a fact. No official decision has yet been announced, although an adjustment of pig-iron prices is expected soon. Owing to the constant rise in production costs, ironmasters contend that the existing maxima leave but a narrow margin of profit and representations have been made to the authorities. If coke and pig-iron prices are advanced, an adjustment must ensue for all kinds of finished iron and steel. In order to avoid disturbing the whole list of maximum rates, the authorities might possibly find it more convenient to bring about an adjustment as between the Government and the makers. An early announcement is anxiously awaited.

The prospect of an advance has stimulated pig-iron demand considerably over the end of October but not a few makers declined to arrange further contracts until the complex position is cleared up. Orders where booked are subject to a revision of the official prices. Owing to greater activity among iron founders, especially in Scotland, heavier applications for Cleveland common iron have been dealt with, users finding no difficulty in securing all the quantities wanted, while output is fully maintained. Deliveries nevertheless are impeded by lack of cars. In view of the ample supplies, it is now suggested that the system of allocation of Cleveland iron under the local Control Committee may be dropped altogether. The stringency of hematite, however, continues. Good quantities are reserved for France under official supervision and there is a continuous demand from Italy. Great efforts are made to push the output of all steel-making irons but many difficulties are being encountered in labor and raw materials. It is confidently expected, however, that the furnaces in blast will be increased before the end of the year.

Semi-finished steel is unchanged, the great bulk being absorbed by national needs, leaving little for mercantile work. Some of the steelworks are unwilling to renew contracts at the official price of £10 7s 6d for Welsh bars and billets. The only feature in American material has been the further considerable reduction in the price of wire rods to about £26, c.i.f. Liverpool, for November-December shipment. Demand is very slow and there is no difficulty in placing small orders on that basis.

Prices of uncontrolled material tend upward strongly, the feature being the sharp advance in gas steel strip to about £18 net, which figure is conceded readily by buyers. Buying pressure in all descriptions of finished iron and steel is unrelaxed, excepting for iron and steel hoops. Only limited quantities of finished steel material are finding their way outside of the control.

Tin plates have stiffened, chiefly under the influence of the wages' question and the increased cost of coal and makers look for an advance in the maximum basis price from 30s for cokes, 20 by 14, net, at works. Demand for the Allies has been fairly active, further considerable orders having been placed for France for November shipment. Some of the works find difficulty

in disposing of wasters which have been accumulating, chiefly owing the lack of trading facilities under the restrictions, which it is hoped will be modified.

The easier feeling lately in ferromanganese is attributed to the weaker and unsettled state of the American market. Practically no export business has been reported lately, f.o.b. quotations for loose for forward shipment to Continental ports being about £70. Business for American North Atlantic ports is still in abeyance, c.i.f. quotations being quite nominal at \$290 to \$300 for January-June shipment. A revision of the current domestic price of £25 is now understood to be under consideration, this figure being doubtless too low.

New York

NEW YORK, Nov. 20.

Pig Iron.—Complaints with regard to car shortage are coming with increasing force. This applies particularly to Southern iron, which is very far behind in delivery. In spite, however, of unfavorable conditions, fair sales of Alabama iron have been made during the past week. The sales of Northern iron have been numerous but for small tonnages. The demand for malleable is particularly active. Some sales during the past few days have been for delivery as late as the third quarter of next year, but most of them are not later than the first half of next year. For early delivery we quote as follows, tidewater:

No. 1 X.....	\$35.25
No. 2 X.....	34.25
No. 2 Plain.....	33.75
No. 2 Southern (rail and water).....	37.25
No. 2 Southern (all rail).....	39.15
No. 2 X Virginia.....	37.00 to 37.25

Ferroalloys.—The domestic ferromanganese market is firm at \$250 but it is not active. A fair business has been done in the last week for next year's delivery at this level, about 1000 tons being bought by a large steel foundry interest. One representative of a British producer has sold a fair sized lot to the United States Government for delivery in February and can quote on further business at \$250, seaboard, for delivery in the first half, subject to license to ship. It is reported that further fair sales of spiegeleisen have been made in the week but details are lacking. The quotation for the 20 per cent grade is \$60 at furnace for next year, with \$65 to \$70 asked for November or December. Ferrosilicon, 50 per cent, is unchanged at \$175 for this year and \$140 to \$150 for next year's delivery.

Finished Iron and Steel.—In a dull week so far as domestic buying is concerned and with a relatively restricted volume of buying for export, requirements for fabricated steel constitute the large factor in fresh commitments for steel. Still increasing quantities for ships and shipyards is the order of the day and fabricators are looking for a continued flow of such business for an indefinite time. The needs over 10 months for the American International Shipbuilding Corporation are put at 450,000 tons; of this the Dominion Bridge Works will supply 50,000 tons. For airplane warehouses, etc., in the New York district for the Navy bids were taken on Nov. 17 for structures involving 3000 tons. The American International Shipbuilding Corporation for eight buildings on Hog Island will require 1500 to 2000 tons. The American Bridge Company has been awarded a large part of the hangars at Langley Fields. The Harris Structural Steel Co. will supply 200 tons for public school No. 40. Against the tremendous quantities of shapes and plates which will ultimately be needed for the shipbuilding program, certainly in the latter half of next year, is the condition of 50 per cent operation of some of the steel mills, as in the Youngstown district, owing to fuel shortage. Little surprise is expressed that in view of the present incomplete condition of shipyards and incomplete ranks of workmen, reports are again received of ship steel received in advance of needs. What little export business has been going is of course done at prices independent of those fixed. Wire nails have sold at 4.5c. and wire at corresponding prices, bars at 4c., 4.25c. and 4.50c., Pittsburgh, and some structural as high as 5c. Warehouse prices have been established quickly with a fair volume

of business at the new prices, which are, of course, as stated in last week's issue, 1c. above the mill price plus the freight from mill to warehouse. We quote mill shipments of steel bars at 3.095c., New York; shapes 3.195c., plates 3.445c. and bar iron, the price established last week, at 3.695c., New York. Out of store prices are 1c. higher and to all must be added 3 per cent of the freight charge or about 20c. per 100 lb. for the transportation tax.

Old Material.—The price situation as to scrap is very unsatisfactory and is causing some rather unusual expedients to be resorted to by some buyers and sellers. On account of the price of No. 1 railroad wrought fixed by the Government, \$35, being lower than those having it are willing to accept, some deals are being put through whereby No. 1 railroad wrought is sold at \$35, but other kinds of scrap on which prices have not been fixed are sold at much higher prices than have prevailed recently. This is regarded as an evasion and is being vigorously denounced by dealers who are strongly supporting the policy of maintaining Government quotations in spirit and letter. Hence it is freely predicted that Government prices will be fixed on all kinds of iron and steel scrap at an early date. We quote prices of brokers as follows to New York producers and dealers, per gross ton, New York:

Heavy melting steel scrap (for shipment to eastern Pennsylvania)....	\$24.00 to \$24.50
Old steel rails (short lengths) or equivalent heavy steel scrap.....	24.00 to 25.00
Relaying rails.....	45.00 to 50.00
Rerolling rails.....	33.00 to 34.00
Iron and steel car axles.....	41.00 to 42.00
No. 1 railroad wrought.....	32.00 to 33.00
Wrought-iron track scrap.....	27.00 to 28.00
No. 1 yard wrought long.....	27.00 to 28.00
Light iron.....	7.00 to 8.00
Cast borings (clean).....	16.00 to 17.00
Machine-shop turnings.....	14.00 to 15.00
Mixed borings and turnings.....	13.00 to 14.00
Wrought-iron pipe (1 in. minimum diameter), not under 2 ft. long....	25.00 to 26.00

Dealers in New York City and Brooklyn are quoting as follows to local foundries, per gross ton, but for delivery to cupola platforms of Brooklyn foundries, about \$3 more is quoted:

No. 1 machinery cast.....	\$25.00 to \$26.00
No. 1 heavy cast (column, building materials, etc.).....	21.00 to 22.00
No. 2 cast (radiators, cast boilers, etc.).....	21.00 to 22.00
Stove plate.....	19.00 to 20.00
Locomotive grate bars.....	16.00 to 17.00
Malleable cast (railroad).....	27.00 to 28.00
Old carwheels.....	27.00 to 28.00

Cast Iron Pipe.—Very little business, for either public or private needs is developing. While concessions are made to the Government whenever it comes into the market, New York quotations on ordinary business are still \$56.50 on 6-in. and heavier and \$59.50 on 4-in.

New Greaves-Etchells Electric Furnaces

The Electric Furnace Construction Co., Philadelphia, announces the following contracts for the installation of Greaves-Etchells furnaces.

The Ford Motor Co., Detroit, Mich., will install one furnace in connection with the manufacture of aircraft steel for the Government.

The Halcomb Steel Co., Syracuse, N. Y., will install two 3-ton furnaces for the manufacture of special aeroplane and motor steels.

The installation of these three furnaces will bring the total operating or contracted for in the United States to 10.

Brazilian Exports of Manganese Ore

Brazilian exports of manganese ore have been very large in 1917. For the first half of each of the last five years the following statistics are given in gross tons:

To July 1, 1917.....	245,088
To July 1, 1916.....	240,090
To July 1, 1915.....	102,870
To July 1, 1914.....	85,500
To July 1, 1913.....	49,600

The 1917 half year exports are five times those for the same period in 1913 and already exceed the record breaking exports total in the first six months of 1916.

IRON AND INDUSTRIAL STOCKS

Payment on Liberty Bonds Made Without Causing Trouble

NEW YORK, Nov. 21

The principal event of the past week was the making of payments of more than \$700,000,000 on the second Liberty loan. The ease with which this transaction was carried through was a remarkable tribute to the Federal Reserve banking system. Dun's Review, in speaking of it, says:

"How skillfully the banking situation is being managed was demonstrated on Thursday, when the payments in connection with the 18 per cent instalment on the second war loan had no appreciable influence on rates for money. That there would be anything resembling a real flurry, no one had imagined, but it had not everywhere been expected that this important financing would be arranged without causing so much as a ripple in the market. The fact that the entire transaction, while nominally involving huge sums, was largely a matter of bookkeeping does not obscure the able handling of the operation, nor the facilities which rendered the maintenance of stable conditions possible."

Although a number of stocks declined during the week, iron and steel shares fared better than many others. Among the stocks that recorded gains were: American Locomotive, com. 1½ points; Baldwin Locomotive, com., 3; Bethlehem Steel, com., 1½; Bethlehem Steel, class B, ¾; Gulf States Steel, 1¼; Lackawanna Steel, 3; Midvale Steel, ¾; Pressed Steel Car, com., 1¼; Superior Steel, 1¼. Among those recording losses were: Republic Iron & Steel, com., ¾; Republic Iron & Steel, pref., ¼; United States Steel, com., ¾; United States Steel, pref. 1½.

The range of prices on active iron and industrial stocks from Wednesday of last week to Tuesday of this week was as follows:

Alle-Chalm. com. 16¼-18¼	Int. Har. Corp. pf. 98-98½
Alle-Chalm. pf. 70	Lack. Steel 71-78
Am. Can. com. 31¾-35½	Lake Super. Corp. 10¼-11¾
Am. Can. pf. 93¾-94	Midvale Steel 41½-44¼
Am. Car & Fdry. com. 60½-64¾	Nat.-Acme. 25½-27½
Am. Car & Fdry. pf. 104¾	Nat. En. & Stm. com. 34-37½
Am. Loco. com. 48½-54¾	Nat. En. & Stm. pf. 92
Am. Loco. pf. 94	N. Y. Air Brake 104-109¼
Am. Radi. com. 270	Nova Sco. Steel 60¼-71¾
Am. Ship com. 87½-88	Press. Steel com. 51¼-56½
Am. Steel Fdries. 52¼-54¾	Press. Steel pf. 90
Bald. Loco. com. 52¼-59	Ry. St. Spr. com. 39¾-40¾
Beth. Steel com. 77¾-82¾	Ry. St. Spr. pf. 96½
Beth. Steel, Class B. 75¼-83¼	Republic com. 68½-74¾
Beth. Steel pf. 85	Republic pf. 94-94½
Cambria Steel 120	Sloss com. 34½-36
Cent. Fdry. com. 25	Superior Steel 33-34¾
Cent. Fdry. pf. 36	Superior St. 1st pf. 97
Chic. Pneu. Tool. 43-46½	Transue-Wms. 37-39
Cole. Fuel 31½-34½	Un. Alloy Steel 1st pf. 36-37
Crucible St. com. 51¼-56½	U. S. Pipe com. 11¾-11¾
Crucible St. pf. 85¼-86	U. S. Steel com. 89¼-96¾
Dewar & Co. pf. 95¼-97½	U. S. Steel pf. 107½-108¾
Gen. Electric 123½-130	Va. I. C. & Coke 51-52
Gr. No. Ore. Cert. 24-26	Warwick 8¼-8½
Gulf States Steel 77½-85¼	West. Electric 36¼-39
Int. Har. of N. J. com. 100¼-105	
Int. Har. Corp. com. 50¾-55	

American Steel Foundries

The American Steel Foundries reports for nine months ended Sept. 30:

	1917	1916	1915
Net earnings*	\$5,568,911	\$2,265,604	\$129,833
Total income	5,783,826	2,353,087	179,045
Charges, sinking fund, depreciation, etc.	597,040	608,958	659,172
War taxes	1,500,000		
Surplus after deducting charges	\$3,686,786	1,744,129	\$480,127

*After deducting manufacturing, selling, administrative and other expenses. †Deficit. ‡Equivalent to \$21.45 a share earned on \$17,184,000 stock in nine months' period, compared with \$16.14 a share in the same period of 1916.

The charges in 1917 include \$433,310 set aside for bond sinking fund and debenture retirement.

More Liberty Loans

An important meeting of bankers was held in New York recently to consider the financial future. It was estimated that the amount of super and excess

profit taxes to be paid June 1 in Ohio, Pennsylvania, New York and New England, will amount to \$1,250,000,000, and it is felt that the withdrawal in a single day of such an amount of money would cause serious financial disturbance. For this reason, the conference decided to submit to the next session of Congress a bill that will permit the banks to enter the amount to be paid to the credit of the Government and let the Treasury Department draw as needed, so as to scatter the withdrawal over a longer period. At the conference it was stated that there would be a bond issue of \$4,000,000,000 in February and one for \$4,000,000,000 or \$5,000,000,000 in June.

Dividends

The Cambria Steel Co., quarterly, 75c. per share and extra 75c. per share, payable Dec. 15.

The Gulf States Steel Co., quarterly, 2½ per cent on the common, 1¾ per cent on the first preferred and 1½ per cent on the second preferred, all payable Jan. 2.

The Harbison-Walker Refractories Co., quarterly, 1½ per cent on the preferred, payable Jan. 19.

The Republic Iron & Steel Co., quarterly, 1½ per cent on the common, payable Feb. 1, and 1¾ per cent on the preferred, payable Jan. 2.

The Youngstown Sheet & Tube Co., quarterly, 2 per cent and extra 3 per cent on the common, and 1¾ per cent on the preferred, all payable Dec. 31.

Spelter Production in Third Quarter, 1917

WASHINGTON, Nov. 19.—As the result of a canvass by the United States Geological Survey to ascertain the production of spelter in the United States during the third quarter of 1917 it is estimated by C. E. Sieben-thal, who has prepared the statistics on the basis of returns of over 95 per cent of the production, that the output of primary spelter from domestic ores was 132,700 net tons and from foreign ores 23,900 tons, a total of 156,600 tons, as compared to an average of 180,569 tons per quarter during the first half of 1917, 175,502 tons per quarter during the last half of 1916, and 158,226 tons per quarter during the first half of 1916. In addition to the primary spelter, the amount distilled from skimmings, drosses, etc., was 4400 tons, as compared with 6000 tons in each of the two quarters preceding. The total production for the first nine months of 1917 was 444,267 tons from domestic ores, 73,457 tons from foreign ores, and 16,550 tons from secondary materials. Returns not yet having been received from the Robert Lanyon Zinc and Acid Co. and the Clarksburg Zinc Co., it has been necessary to estimate their output together with that of two secondary plants.

The stocks of spelter at smelters Sept. 30 amounted to 47,186 tons, as compared with 33,147 tons June 30 and 17,598 tons Jan. 1.

The zinc content of zinc ore imported into the United States in the third quarter of 1917 was 15,000 tons, and the exports during July and August of spelter made from domestic ores were 16,800 tons and of spelter made from foreign ore, 3000 tons. The number of idle retorts Sept. 30 was 64,626, or 28 per cent of the total number of retorts, and included 18 entire plants, several of which are being dismantled. One electrolytic plant also will possibly be dismantled.

It is evident that many zinc smelters, loath to break up their labor forces while there was a probability that Government requirements might call for their full capacity, have continued smelting when it was no longer profitable, or even at a loss, thinking that the heavy orders expected when this country entered the war would eventually be given; but it is also evident that this unprofitable production cannot much longer be maintained.

The Taylor Society will hold its annual meeting at Washington Dec. 7 and 8. Government organization work will probably come in for special attention, with a symposium on centralization versus decentralization. The control of production, storage and distribution of war supplies is likely also to be one of the subjects. H. W. Shelton, Tuck School of Administration and Finance, Dartmouth College, Hanover, N. H., is secretary.

Metal Markets

The Week's Prices

Cents per Pound for Early Delivery							
Copper, New York		Tin,	Lead		Spelter		
Lake	Electro-	New	New	St.	New	St.	
	lytic	York	York	Louis	York	Louis	
Nov. 14.....	23.50	23.50	73.00	6.50	6.37½	8.00	7.75
15.....	23.50	23.50	73.00	6.50	6.37½	8.12½	7.87½
16.....	23.50	23.50	73.00	6.50	6.37½	8.12½	7.87½
17.....	23.50	23.50	.....	6.50	6.37½	8.00	7.75
19.....	23.50	23.50	74.00	6.50	6.37½	8.00	7.75
20.....	23.50	23.50	77.00	6.50	6.37½	8.00	7.75

NEW YORK, Nov. 21.

Inactivity characterizes all the markets. Copper is under tight control and nominal at the Government price. Tin has continued to advance and has again sold at a record price. Lead is dull but firm. Spelter is again inactive with a tendency to weakness. Antimony is nominally unchanged.

New York

Copper.—Deliveries and sales of copper are under absolute control and there is no market. The metal is being delivered satisfactorily on old contracts but large quantities are unobtainable for early delivery. It is admitted that firms, having Government contracts requiring copper, are awarded sufficient metal at the Government price of 23.50c. which we continue to quote as nominal. Some small dealers are selling small lots at 26c. to 28c. per lb. while others are not. Most of this metal, however, was bought before any price was fixed. It is felt that an understanding as to just where the small dealer stands will soon be given out, since the steel jobbers' position has just been made clear.

Tin.—Spot tin eclipsed the record of last week and sold yesterday in small lots at 77c., New York, the highest price ever recorded. It has continued to advance since a week ago but sales have been light or only just enough to establish a price. There seems to be no immediate relief in sight. After several trips to Washington the Tin Committee has announced no solution of the permit question, though one was expected before this. Some feel that negotiations have struck a snag. Were a satisfactory arrangement made at once, definite relief would not be possible from three weeks to a month. In general the entire market is inactive pending some solution of the spot situation. Arrivals had been 1185 tons for the month, including yesterday, with 4100 tons reported afloat. Spot Straits in London yesterday sold at £279 10s. per ton, an advance of £5 10s. in the week.

Lead.—The market is bare of features or interest. Demand has tapered off until it is very light. There is no pressure to sell. This condition is natural after the large sales of the past few weeks. Quiet strength characterizes the situation, however. The leading producer continues to quote 6.25c., New York, with the outside market at 6.50c., New York, or 6.37½c., St. Louis. Small sales have been made at these prices.

Spelter.—After showing some signs of strength last week and advancing slightly on good inquiry and fair sales for these times, the market has again grown dull and weaker. There is now but little inquiry, and the business done is of small proportion. The market is quotable at 7.75c., St. Louis, or 8c., New York, for prime Western for early delivery, but a few sellers are willing to part with their metal below this. A zinc committee has been formed, made up of representatives of prominent producers, but the results of its deliberations with the Government have not yet been published. Nothing more of a definite nature has been heard of price fixing.

Old Metals.—The market is practically unchanged. Dealers' selling prices are nominally as follows:

	Cents per lb.
Copper, heavy and crucible (nominal)	23.50
Copper, heavy and wire (nominal)	23.50
Copper light and bottoms	21.00 to 22.00
Brass, heavy	17.25 to 17.50
Brass, light	12.00 to 12.50
Heavy machine composition	24.00 to 24.50
No. 1 yellow rod brass turnings	15.00 to 15.25
No. 1 red brass or composition turnings	19.00 to 19.50
Lead, heavy	5.50
Lead, tea	4.25
Zinc	6.00

Antimony.—The market lacks interest and buying power and is nominally unchanged at 13.75c. to 14c. per lb., New York, duty paid, for early delivery.

Aluminum.—No. 1 virgin metal, 91 to 99 per cent pure, is in poor demand at 36c. to 38c. per lb., New York, for early delivery.

Chicago

Nov. 19.—Small lots of copper have been sold around 28c., but the quantity available is steadily growing smaller, and with some consumers, more particularly the smaller ones, the situation looks more serious. In a general way the entire metal market is quiet. Tin is scarce at 75c. per pound, but there is no pressure to buy. The strain is off the lead market and the metal is easily procurable. Antimony is again quoted, the jobbers asking 15c. to 16c. All prices were withdrawn last week pending action by the Government, but the expected action did not come and quotations were resumed. We quote as follows: Casting, Lake and electrolytic copper, 28c.; tin, carloads, 75c.; small lots, 77c.; lead, 6.25c. to 6.50c.; spelter, 7.75c. to 8c.; sheet zinc, 19c.; antimony, 15c. to 16c. On old metals we quote buying prices for less than carload lots as follows: Copper wire, crucible shapes, 21c.; copper clips, 20c.; copper bottoms, 19c.; red brass, 19c.; yellow brass, 14.50c.; lead pipe, 5c.; zinc, 5c.; pewter, No. 1, 35c.; tinfoil, 42c.; block tin, 47c.

St. Louis

Nov. 19.—Non-ferrous metals, particularly the Missouri product, have been in better tone during the past week. The close, for carload lots, to-day was: Lead, 6.50c.; spelter, 8c. to 8.12½c. In less than carload lots the close to-day was: Lead, 7c.; spelter, 8.50c.; tin, 79c.; copper, 27.50c. nominal; Asiatic antimony, 18c. In the Joplin district most of the ore sold at better than \$60 per ton for zinc blende, basis of 60 per cent metal, but the basis range was from \$57.50 to \$72.50 per ton, only a small portion of the tonnage sold at the top price and in consequence the average for the week was but \$60 per ton. Demand was weaker and the shortage of cars was much more pronounced. Calamine ranged from \$32.50 to \$37.50 per ton basis of 40 per cent metal with the average for the district for the week at \$35 per ton. Lead ore was steady at \$75 per ton, basis of 80 per cent metal, with the average for the week for the district at \$74 per ton. Operators seem to be awaiting the results of the conference of producers with the Government War Minerals Committee and this is having its effect on the market. On miscellaneous scrap metals we quote dealers' buying prices as follows: Light brass, 10c.; heavy yellow brass, 14c.; heavy red brass and light copper, 19.50c.; heavy copper and copper wire, 20c.; pewter, 25c.; tinfoil, 42c.; zinc, 5c.; lead, 5.50c.; tea lead, 5c.

Foundrymen's War Service Board Appointed

As provided by resolution adopted at the Boston convention a war service board of five for the American Foundrymen's Association has been appointed, as follows: R. A. Bull, Duquesne Steel Foundry Co., Pittsburgh, chairman; C. C. Smith, Union Steel Castings Co., Pittsburgh; J. C. Haswell, Dayton Malleable Iron Co., Dayton, Ohio; G. H. Clamer, Ajax Metal Co., Philadelphia; H. D. Miles, Buffalo Foundry & Machine Co., Buffalo.

The committee represents steel, malleable, gray iron and non-ferrous branches of the foundry industry, and the individual members represent affiliation with the American Foundrymen's Association, the National Founders' Association, the Steel Founders' Society, the American Malleable Castings Association and the American Institute of Metals. An early meeting of the board has been scheduled but date has not yet been settled.

The William F. Remppis Co., Reading, Pa., operating a plant on Spruce Street for the production of iron and steel shapes, has been reorganized and incorporated under the name of the William F. Remppis Iron Works, with capital of \$50,000. William F. Remppis, Ferdinand Thun and Lambert A. Rehr, Reading, are the incorporators.

Prices Finished Iron and Steel, f.o.b. Pittsburgh

Freight rates from Pittsburgh on iron and steel articles, aside from wrought iron and steel pipe in carloads, per 100 lb., New York, 19.5c.; Philadelphia, 18.5c.; Boston, 21.5c.; Buffalo, 11.6c.; Cleveland, 13.5c.; Cincinnati, 18.5c.; Indianapolis, 20c.; Chicago, 21.5c.; St. Louis, 27c.; Kansas City, 47c.; minimum carload, 36,000 lb.; St. Paul, 35.5c.; minimum carload, 36,000 lb.; Denver, 79c.; minimum carload, 36,000 lb.; Omaha, 47c.; minimum carload, 36,000 lb.; New Orleans, 30.7c.; Birmingham, 46c.; Pacific Coast, 75c.; minimum carload, 80,000 lb. To the Pacific Coast the rate on steel bars and structural steel is 90c.; minimum carload, 40,000 lb. and 85c.; minimum carload, 50,000 lb. On wrought iron and steel pipe the rate from Pittsburgh to Kansas City is 40c. per 100 lb., minimum carload 46,000 lb.; to Omaha 40c., minimum carload 46,000 lb.; to St. Paul 35.5c., minimum carload 46,000 lb.; Denver 79c., minimum carload 46,000 lb. A 3 per cent transportation tax now applies.

Structural Material

I-beams, 3 to 15 in.; channels, 3 to 15 in., angles, 3 to 6 in. on one or both legs, 1/4 in. thick and over, and zees 3 in. and over, 3c.

Wire Products

Wire nails, \$3.50 base per keg; galvanized, 1-in. and longer, including large-head barb roofing nails, taking an advance over this price of \$2, and shorter than 1-in., \$2.50. Bright basic wire, \$3.35 per 100 lb.; annealed fence wire, Nos. 6 to 9, \$3.25; galvanized wire, \$3.95; galvanized barb wire, and fence staples, \$4.35; painted barb wire, \$3.65; polished fence staples, \$3.65; cement-coated nails, \$3.40 base; these prices being subject to the usual advances for the smaller trade, all f.o.b. Pittsburgh, freight added to point of delivery, terms 60 days net, less 2 per cent off for cash in 10 days. Discounts on woven-wire fencing are 47 per cent off list for carload lots, 46 per cent for 1000-rod lots, and 45 per cent off for small lots, f.o.b. Pittsburgh.

Bolts, Nuts and Rivets

Large rivets, \$4.65 base 7/16 in. x 6 in. smaller and shorter rivets, 45-10 per cent off list. Machine bolts h.p. nuts, 3/4 in. x 4 in. Smaller and shorter, rolled threads, 50-10-5 per cent off list. Cut threads, 50-5 per cent off list. Larger and longer sizes, 40-10 per cent off list. Machine bolts, c.p.c. and t nuts, 3/4 in. x 4 in. Smaller and shorter, 40-10 per cent off list. Larger and longer, 35-5 per cent off list. Carriage bolts, 3/4 in. x 5 in. Smaller and shorter, rolled threads, 50-5 per cent off list. Cut threads, 40-10-5 per cent off list. Larger and longer sizes, 40 per cent off list. Lag bolts, 50-10 per cent off list. Plug bolts, Nos. 1, 2, 3, 50 per cent off list. Hot pressed nuts, sq. blank, 2.50c. per lb. off list. Hot pressed nuts, hex., blank, 2.30c. per lb. off list. Hot pressed nuts, sq., tapped, 2.30c. per lb. off list. Hot pressed nuts, hex., tapped, 2.10c. per lb. off list. C.p.c. and t. sq. and hex. nuts, blank, 2.25c. per lb. off list. C.p.c. and t. sq. and hex. nuts, tapped, 2.00c. per lb. off list. Semi-finished hex. nuts 3/4 in. and larger, 60-10-10 per cent off list. 3/4 in. and smaller, 70-5 per cent off list. Stove bolts, 70-10 per cent off list. Stove bolts, 2 1/2 per cent extra for bulk. Tire bolts, 50-10-5 per cent off list. The above discounts are from present lists now in effect. All prices carry standard extras.

Wire Rods

No. 5 common basic or Bessemer rods to domestic consumers, \$57; chain rods, \$65; screwetaoshrdluetautnunan other rods of that character, \$65. A tentative differential of \$10 per ton over soft rods for high carbon rods has been agreed upon.

Railroad Spikes and Track Bolts

Railroad spikes 9/16 in. and larger, \$5 to \$5.50; 3/4 in., 7/16 in. and 1/2 in., \$7.00 base. Boat spikes, \$5.25 per 100 lb., f.o.b. Pittsburgh. Track bolts with square nuts, 7c. to 7.50c. for railroads, and 8c. to 8.50c. in small lots for fairly prompt shipment.

Terne Plate

Effective Nov. 7, prices on all sizes of terne plates are as follows: 8-lb. coating, 200 lb., \$15 per package; 8-lb. coating, 1 C., \$15.20; 12-lb. coating, 1 C., \$16.75; 15-lb. coating, 1 C., \$17.75; 20-lb. coating, 1 C., \$19; 25-lb. coating, 1 C., \$20; 30-lb. coating, 1 C., \$21; 35-lb. coating, 1 C., \$22; 40-lb. coating, 1 C., \$23 per package, all f.o.b. Pittsburgh, freight added to point of delivery.

Iron and Steel Bars

Steel bars at 2.90c. for delivery late this year, and 4.50c. to 5c. from warehouse in small lots for prompt shipment. Refined iron bars, 3.50c. in carload and larger lots f.o.b. mill.

Wrought Pipe

The following discounts are to jobbers for carload lots on the Pittsburgh basing card, as announced Nov. 5 by the Government on steel pipe, those on iron pipe being the same as quoted for some time:

Steel			Iron		
Inches	Black	Galv.	Inches	Black	Galv.
1 1/8, 1 1/4 and 3/8	44	17 1/2	1 1/8 and 1 1/4	23	+4
1 1/2	48	33 1/2	3/8	24	+3
3/4 to 3	51	37 1/2	1/2	28	10
			3/4 to 1 1/2	33	17
Lap Weld			Lap Weld		
2	44	31 1/2	1 1/4	18	3
2 1/2 to 6	47	34 1/2	1 1/2	25	11
7 to 12	44	30 1/2	2	26	12
13 and 14	34 1/2		2 1/2 to 6	28	15
15	32		7 to 12	25	12
Butt Weld, extra strong, plain ends			Butt Weld, extra strong, plain ends		
1 1/8, 1 1/4 and 3/8	40	22 1/2	1 1/8, 1 1/4 and 3/8	22	5
1 1/2	45	32 1/2	1 1/2	27	14
3/4 to 1 1/2	49	36 1/2	3/4 to 1 1/2	33	18
2 to 3	50	37 1/2			
Lap Weld, extra strong, plain ends			Lap Weld, extra strong, plain ends		
2	42	30 1/2	1 1/4	19	4
2 1/2 to 4	45	33 1/2	1 1/2	25	11
4 1/2 to 6	44	32 1/2	2	27	14
7 to 8	40	26 1/2	2 1/2 to 4	29	17
9 to 12	35	21 1/2	4 1/2 to 6	28	16
			7 to 8	20	8
			9 to 12	15	3

To the large jobbing trade an additional 5 per cent is allowed over the above discounts, which are subject to the usual variation in weight of 5 per cent. Prices for less than carloads are four (4) points lower basing (higher price) than the above discounts on black and 5 1/2 points on galvanized.

On butt and lap weld sizes of black iron pipe, discounts for less than carload lots to jobbers are seven (7) points lower (higher price) than carload lots, and on butt and lap weld galvanized iron pipe are nine (9) points lower (higher price).

Boiler Tubes

The following are the prices for carload lots f.o.b. Pittsburgh, announced Nov. 13, as agreed upon by manufacturers and the Government:

Lap Welded Steel		Charcoal Iron	
3 1/2 to 4 1/2 in.	34	3 1/2 to 4 1/2 in.	12 1/2
2 1/2 to 3 1/2 in.	24	3 to 3 1/2 in.	+ 5
2 1/2 in.	17 1/2	2 1/2 to 2 3/4 in.	+ 7 1/2
1 3/4 to 2 in.	13	2 to 2 1/2 in.	+ 22 1/2
		1 3/4 to 1 3/8 in.	+ 35
Standard Commercial Seamless—Cold Drawn or Hot Rolled		Standard Commercial Seamless—Cold Drawn or Hot Rolled	
Per Net Ton		Per Net Ton	
1 in.	\$340	1 3/4 in.	\$220
1 1/4 in.	280	2 to 2 1/2 in.	190
1 3/8 in.	270	2 1/2 to 3 1/4 in.	180
1 1/2 in.	220	4 in.	200
		4 1/2 to 5 in.	220

These prices do not apply to special specifications for locomotive tubes nor to special specifications for tubes for the Navy Department, which will be subject to special negotiation.

Sheets

Makers' prices for mill shipments on sheets of United States standard gage, in carload and larger lots, are as follows, 30 days net or 2 per cent discount in 10 days. [Open-hearth stock, \$5 per ton above these prices.]

Blue Anneal—Bessemer		Cents per lb.	
Nos. 3 to 8	4.20		
Nos. 9 and 10	4.25		
Nos. 11 and 12	4.30		
Nos. 13 and 14	4.35		
Nos. 15 and 16	4.45		
Box Annealed, One Pass Cold Rolled—Bessemer		Cents per lb.	
Nos. 17 to 21	4.80		
Nos. 22 and 24	4.85		
Nos. 25 and 26	4.90		
No. 27	4.95		
No. 28	5.00		
No. 29	5.05		
No. 30	5.15		
Galvanized Black Sheet Gage—Bessemer		Cents per lb.	
Nos. 10 and 11	5.25		
Nos. 12 and 14	5.35		
Nos. 15 and 16	5.50		
Nos. 17 to 21	5.65		
Nos. 22 and 24	5.80		
Nos. 25 and 26	5.95		
No. 27	6.10		
No. 28	6.25		
No. 29	6.50		
No. 30	6.75		
Tin-Mill Black Plate—Bessemer		Cents per lb.	
Nos. 15 and 16	4.80		
Nos. 17 to 21	4.85		
Nos. 22 to 24	4.90		
Nos. 25 and 27	4.95		
No. 28	5.00		
No. 29	5.05		
No. 30	5.10		
Nos. 30 1/2 and 31	5.10		

Prices of Light Steel Rails Are Reduced

Quotations on Chain and Cold Rolled Strip Steel Are Also Revised—Differentials on Sheets, Tin Plate, Billets and Tubes

Two additional announcements were made Tuesday, Nov. 20, by Judge Gary in regard to iron and steel products. The first announcement relates to prices on light rails, chain and cold rolled strip steel, and a most interesting feature is the quoting of light rails on the basis of \$3 per 100 lb. for sections from 25 lb. to 45 lb., instead of the former method of quoting on a basis of gross tons. This makes a price of \$67.20, compared with recent quotations of \$75 to \$80 on this weight. The price of chain is fixed at \$8 per 100 lb. for 3/8-in. and for cold rolled strip steel at \$6.50. The first announcement is as follows:

"Referring to the statement of the chairman of the Committee on Steel and Steel Products of the American Iron and Steel Institute dated Nov. 13, 1917, recommending prices for certain steel products to be adopted as maximum prices, to take effect immediately, to apply to the requirements of the United States Government, to the requirements of the Allies and for domestic consumption within the United States, the committee now makes similar recommendation to the iron and steel industry in respect of the prices below stated and expresses the hope that there will be no hesitancy in accepting this recommendation."

The second announcement relates to differentials and extras on various products and is as follows:

"The Committee on Steel and Steel Products of the American Iron and Steel Institute has received from a sub-committee a report based on information received from representative manufacturers covering a list of differentials and extras on sheets, tin plates and round billets for seamless tubes, and from such report and other data available the committee has reached a conclusion as to fair and reasonable differentials and extras to be charged for those products and now recommends to the industry that the list of extras and differentials below stated be adopted, to take effect immediately. The committee expresses the hope that there will be no hesitancy in accepting this recommendation."

In addition to the other statements, it is announced that on round billets for seamless tubes the regular steel bar extras and differentials for sizes and carbon specifications are to be used.

Tin and Terne Plate

STANDARD DIFFERENTIALS AND EXTRAS

Cokes and Charcoals—Bessemer or Open-Hearth.

Basis	Cokes	A	2A	3A	4A	5A	Prem.
55 lb.	7.35c.	.80c.	1.20c.	1.50c.	2.10c.	2.70c.	3.30c.
60 lb.	7.37 1/2c.	.80c.	1.20c.	1.50c.	2.10c.	2.70c.	3.30c.
65 lb.	7.40c.	.80c.	1.20c.	1.50c.	2.10c.	2.70c.	3.30c.
70 lb.	7.45c.	.80c.	1.20c.	1.50c.	2.10c.	2.70c.	3.30c.
75 lb.	7.50c.	.80c.	1.20c.	1.50c.	2.10c.	2.70c.	3.30c.
80 lb.	7.55c.	.80c.	1.20c.	1.50c.	2.10c.	2.70c.	3.30c.
85 lb.	7.60c.	.80c.	1.20c.	1.50c.	2.10c.	2.70c.	3.30c.
90 lb.	7.65c.	.80c.	1.20c.	1.50c.	2.10c.	2.70c.	3.30c.
95 lb.	7.70c.	.80c.	1.20c.	1.50c.	2.10c.	2.70c.	3.30c.
100 lb.	7.75c.	.80c.	1.20c.	1.50c.	2.10c.	2.70c.	3.30c.
107 lb.	7.90c.	.80c.	1.20c.	1.50c.	2.10c.	2.70c.	3.30c.
128 lb.	8.50c.	1.55c.	1.95c.	2.35c.	3.15c.	3.95c.	4.75c.
135 lb.	8.65c.	1.55c.	1.95c.	2.35c.	3.15c.	3.95c.	4.75c.
148 lb.	9.15c.	2.15c.	2.55c.	2.95c.	3.75c.	4.55c.	5.35c.
155 lb.	9.30c.	2.15c.	2.55c.	2.95c.	3.75c.	4.55c.	5.35c.
168 lb.	9.80c.	2.75c.	3.15c.	3.55c.	4.35c.	5.15c.	5.95c.
175 lb.	9.95c.	2.75c.	3.15c.	3.55c.	4.35c.	5.15c.	5.95c.
188 lb.	10.45c.	3.35c.	3.75c.	4.15c.	4.95c.	5.75c.	6.55c.
195 lb.	10.60c.	3.35c.	3.75c.	4.15c.	4.95c.	5.75c.	6.55c.

No.	lb.	Cokes	A	2A	3A	4A	5A	Prem.
22-24 Gage per 100		\$6.25	\$6.75	\$7.00	\$7.25	\$7.75	\$8.25	\$8.75
18-21 Gage per 100		6.15	6.65	6.90	7.15	7.65	8.15	8.65
16-17 Gage per 100		6.05	6.55	6.80	7.05	7.55	8.05	8.55

Unassorted:								
Any grade up to 195 lb.								Deduct 5c. Base
Heavier than 195 lb. sold unassorted only.								
Extra cleaned cokes								Add 10c. Base
Best cokes								Add 30c. Base
Kanners special cokes								Add 40c. Base
Silvered tin								Add 50c. Base
Wasters:								
Cokes, 112 lb. and lighter								Deduct 25c. Base
Cokes, 113 lb. and heavier								Deduct 35c. Base
Charcoals, 112 lb. and lighter								Deduct 25c. Base
Charcoals, 113 lb. and heavier								Deduct 50c. Base

Odd Size:								
All weights up to 195 lb. and all sizes except 14 x 20 and 20 x 28 in lots of less than 100 base boxes								Add 10c. Base
All weights heavier than 195 lb. see "Quantity Extra."								
Primes Only—Cokes:								
All sizes in weights 55 lb. to 135 lb.								Add 10c. Base
All sizes in weights 136 lb. to 195 lb.								Add 20c. Base
Charcoals, all sizes in weights 55 lb. to 195 lb.								Add 40c. Base
Quantity:								
All sizes in weights 55 lb. to 195 lb. in lots of less than 50 base boxes								Add 10c. Base
All sizes in weights heavier than 195 lb. in lots of less than 5000 lb.								Add 5c. per 100 lb.
Packing:								
Sizes which are usually packed 112 sheets per box that are specified 56 sheets.								Add 10c. Base
Fractions to be not less than 1/4 in.								
Tin lined cases								Add 30c. Base
The minimum charge in any case to be 30c. per package.								
Paper lined								Add 15c. Base
The minimum charge in any case to be 15c. per package.								
Strapping:								
Corners only, add 5c. per package.								
Double strapping, add 10c. per package.								

Ternes

8 lb.—100 lb.		\$15.00 per pkg
8 lb.—1C		15.30 per pkg
12 lb.—1C		16.75 per pkg
15 lb.—1C		17.75 per pkg
20 lb.—1C		19.00 per pkg
25 lb.—1C		20.00 per pkg
30 lb.—1C		21.00 per pkg
35 lb.—1C		22.00 per pkg
40 lb.—1C		23.00 per pkg

Weight:		
For IX		Add \$1.80 per pkg
Wasters:		
IC and lighter		Deduct 0.50 per pkg
128 lb. and heavier		Deduct 1.00 per pkg

Odd Size:		
All weights and all sizes other than 14 x 20 and 20 x 28 in lots of less than 100 base boxes		Add 10c. Base
Quantity:		
Items less than 50 base boxes		Add 10c. Base

Long Ternes—8 lb. Coating

No. 30 gage		\$7.00 per 100 lb
No. 29 gage		6.75 per 100 lb
No. 28 gage		6.50 per 100 lb
No. 27 gage		6.35 per 100 lb
No. 25-26 gage		6.20 per 100 lb
No. 22-24 gage		6.05 per 100 lb
No. 17-21 gage		5.90 per 100 lb
No. 16 gage		5.75 per 100 lb

Other grades at usual differentials.

Extras for sizes, etc., same as galvanized sheets.		
Seconds		Deduct 50c. per 100 lb
Unassorted		Deduct 10c. per 100 lb
Primes only		Add 10c. per 100 lb

Tin Mill Black Plate

Hot Rolled and Annealed, or Hot Rolled, 1-Pass Cold Rolled		
Nos. 15-16		\$4.80 per 100 lb
Nos. 17-21		4.85 per 100 lb
Nos. 22-24		4.90 per 100 lb
Nos. 25-27		4.95 per 100 lb
No. 28		5.00 per 100 lb
Nos. 29-30		5.05 per 100 lb
Nos. 30 1/2-31		5.10 per 100 lb
No. 32		5.15 per 100 lb
No. 33		5.20 per 100 lb
No. 34		5.25 per 100 lb
No. 35		5.35 per 100 lb
No. 36		5.45 per 100 lb
No. 37		5.55 per 100 lb
No. 38		5.70 per 100 lb
Blued stove pipe stock		Add 10c. per 100 lb
Enameling Stock		Add 25c. per 100 lb
Full finished black plate		Add 25c. per 100 lb
Show card stock		Add 35c. per 100 lb
Tea tray stock		Add 40c. per 100 lb
Milk can stock		Add 50c. per 100 lb
Nickel plating stock		Add 50c. per 100 lb

Extras for Tin Mill Black

Gage	Widths	Lengths
Nos. 15 to 31	Over 10 to 30 None Under 10 to 6 15c. Under 6 to 4 20c.	10 to 84 None
Nos. 32 to 35	Over 10 to 26 None Over 26 to 30 10c. Over 30 to 32 20c. Under 10 to 8 10c. Under 8 to 5 15c.	Over 10 to 40 None Over 40 to 48 5c. Over 48 to 60 10c. Over 60 to 72 20c. Over 72 to 84 30c.
Nos. 36 to 38	Over 10 to 20 None Over 20 to 24 5c. Over 24 to 28 10c. Over 28 to 30 20c. Under 10 to 8 10c. Under 8 to 5 15c.	Over 10 to 30 None Over 30 to 36 20c. Over 36 to 42 25c. Over 42 to 48 30c. Over 48 to 54 35c. Over 54 to 60 40c.

Nos. 29 to 10	10 to 20 None	10 to 28 None
	Over 20 to 24 10c.	Over 28 to 30 10c.
	Under 10 to 8 15c.	Under 10 to 8 15c.
	Under 8 to 5 20c.	
Quantity:	Items less than 5000 lb. 10c. per 100 lb.	
Boxing:	10c. per 100 lb.	
Crating:	Sizes up to 20 wide of 40 long 10c. per 100 lb.	
Resquaring:		
No. 28 and heavier—Ends	10c. per 100 lb.	
Ends and Sides	12½c. per 100 lb.	
Lighter than No. 28—Ends	12½c. per 100 lb.	
Ends and Sides	15c. per 100 lb.	

One Pass Cold Rolled Black Sheets**STANDARD DIFFERENTIALS AND EXTRAS**

Gage	Price Per 100 lb.
20	Add 20c.
22	Add 10c.
24 (Carload quantities)	Add Base
26	Deduct 5c.
28	Deduct 10c.
30	Deduct 15c.
32	Deduct 20c.
34	Deduct 25c.
36	Deduct 30c.
38	Deduct 35c.

Standard Sizes

Gages Nos. 12 to 30, inclusive, 24, 26, 28 and 30 in. wide, by 72, 84, 96 and 120 in. long. Gages Nos. 14 to 28, inclusive, 26 in. wide by 96 in. and 120 in. long.

See note under extras for boxing and crating.

Extras for Length

Gage	Length	Extra Per 100 lb.
16 and heavier	60 in. and longer	Base
16 and heavier	Under 60 to 30 in.	5c.
16 and heavier	Under 30 to 18 in.	10c.
17 to 18	Over 60 to 120 in.	Base
17 to 18	Over 120 to 132 in.	5c.
17 to 18	Over 132 to 144 in.	10c.
17 to 18	Under 60 to 30 in.	5c.
17 to 18	Under 30 to 18 in.	10c.
19 and lighter	Over 60 to 120 in.	Base
19 and lighter	Over 120 to 144 in.	10c.
19 and lighter	Under 60 to 30 in.	10c.
19 and lighter	Under 30 to 18 in.	20c.

Extras for Width

Gage	Width	Extra Per 100 lb.
16 and heavier	24 in. and wider	Base
16 and heavier	Under 24 to 12 in.	10c.
16 and heavier	Under 12 to 6 in.	15c.
17 to 18	Over 24 to 36 in.	Base
17 to 18	Over 36 to 48 in.	5c.
17 to 18	Under 24 to 12 in.	10c.
17 to 18	Under 12 to 6 in.	15c.
19 and lighter	Under 24 to 12 in.	10c.
19 and lighter	Under 12 to 6 in.	20c.
19 to 21	Over 24 to 36 in.	Base
19 to 21	Over 36 to 44 in.	15c.
19 to 21	Over 44 to 48 in.	25c.
22 to 24	Over 24 to 36 in.	Base
22 to 24	Over 36 to 40 in.	20c.
22 to 24	Over 40 to 48 in.	40c.
25 to 27	Over 24 to 36 in.	Base
25 to 27	Over 36 to 40 in.	20c.
25 to 27	Over 40 to 44 in.	40c.
28	Over 32 to 36 in.	10c.
28	Over 36 to 40 in.	40c.
29 to 30	Over 32 to 36 in.	10c.

Galvanized Sheets and Long Terne Sheets**STANDARD DIFFERENTIALS AND EXTRAS FOR GAGE**

Gage	Price Per 100 lb.
30	add 50c.
29	add 25c.
28 (carload quantities)	Base
27	deduct 15c.
26	deduct 30c.
25-24	deduct 45c.
17-21	deduct 60c.
15-16	deduct 75c.
12-14	deduct 90c.
10-11	deduct \$1.00

Standard Sizes

Gages Nos. 12 to 30, inclusive, 24, 26, 28, 30 and 36 in. wide, by 72, 84, 96 and 120 in. long. Gages Nos. 14 to 28, inclusive, 36 in. wide by 96 in. and 120 in. long.

Extras for Length

Gage	Length	Extra Per 100 lb.
14 and heavier	60 to 144 in.	Base
14 and heavier	Under 60 to 30 in.	5c.
14 and heavier	Under 30 to 18 in.	10c.
17 to 18	Over 60 to 120 in.	Base
17 to 18	Over 120 to 132 in.	5c.
17 to 18	Over 132 to 144 in.	10c.
17 to 18	Under 60 to 30 in.	5c.
17 to 18	Under 30 to 18 in.	10c.
19 and lighter	Over 60 to 120 in.	Base
19 and lighter	Over 120 to 144 in.	10c.
19 and lighter	Under 60 to 30 in.	10c.
19 and lighter	Under 30 to 18 in.	20c.

Extras for Width

Gage	Width	Extra Per 100 lb.
10-15	Over 32 to 40 in.	None
	Over 40 to 44 in.	10c.
	Over 44 to 48 in.	20c.
16-18	Over 32 to 36 in.	None
	Over 36 to 44 in.	10c.
	Over 44 to 48 in.	20c.

19-21	Over 32 to 36 in.	None
	Over 36 to 40 in.	20c.
	Over 40 to 44 in.	30c.
	Over 44 to 48 in.	40c.
22-24	Over 32 to 36 in.	None
	Over 36 to 40 in.	20c.
	Over 40 to 44 in.	40c.
	Over 44 to 48 in.	60c.
25-26	Over 32 to 36 in.	Base
	Over 36 to 40 in.	30c.
	Over 40 to 44 in.	60c.
27	Over 32 to 36 in.	10c.
	Over 36 to 40 in.	50c.
	Over 40 to 44 in.	75c.
28	Over 32 to 36 in.	20c.
	Over 36 to 40 in.	60c.
29-30	Over 32 to 36 in.	20c.
24 and heavier	Under 24 to 12 in.	15c.
	Under 12 to 9 in.	25c.
25 and lighter	Under 24 to 12 in.	20c.
	Under 12 to 9 in.	35c.

See note under boxing and crating.

Blue Annealed Sheets**STANDARD DIFFERENTIALS AND EXTRAS**

Gage	Price Per 100 lb.
5 and heavier	Less 5c.
9 and 10 (carload quantities)	Base
11 and 12	Add 5c.
13 and 14	Add 10c.
15 and 16	Add 20c.

Extras for Length

Gage	Length	Extra Per 100 lb.
16 and heavier	60 in. and longer	Base
16 and heavier	Under 60 to 30 in.	Add 5c.
16 and heavier	Under 30 to 18 in.	Add 10c.

Extras for Width

Gage	Width	Extra Per 100 lb.
16 and heavier	Under 24 to 12 in.	Add 5c.
16 and heavier	Under 12 to 6 in.	Add 10c.
16 and heavier	24 in. and wider	Base

Painted and Formed Products**STANDARD DIFFERENTIALS AND EXTRAS**

Extras per 100 lb. over corresponding gages of flat sheets per square are based on weight per square multiplied by extra per 100 lb.

Painting	Gages	Per 100 lb.
Red oxide of iron	29	\$0.25
	25 to 28	\$0.20
	19 to 24	\$0.15
	12 to 18	\$0.15
Forming		
2-2½-3 and 5 in. corrugated	.05	.05
2 V-cripp—without sticks	.05	.05
¾-1½-in. corrugated	.10	.10
3 V-cripp—without sticks	.10	.10
Pressed standing seam—without cleats	.15	.15
Plain roll roofing—without or with cleats	.15	.15
Plain brick siding	.20	.20

Extras in Addition to Above

Corrugating sheet	crosswise	\$0.10	\$0.10	\$0.10	\$0.10
Curving—corrugated sheets, single curve	.25	.25	.25	.25	
Curving—corrugated sheets, double curve	.50	.50	.50	.50	
Forming sheets under 60 in. long to 30 in. inclusive	.05	.05	.05	.05	
Forming—Sheets under 30 in. long to 20 in. inclusive	.10	.10	.10	.10	
Forming—Sheets under 20 in. long	.25	.25	.25	.25	
Lengths—Standard lengths of all forms are 60, 66, 72, 78, 84, 90, 96, 102, 108, 114, 120, 132 and 144 in. Flat sheets extras will apply on lengths over 132 in.					
Sticks for V-cripp roofing, 25c. per 100 lin. ft.					

Standard Miscellaneous Extras**Shearing Circles, All Gages**

9 to 10 gage	Add 25 per cent
11 to 16 gage	Add 30 per cent
17 to 18 gage	Add 35 per cent
19 to 20 gage	Add 40 per cent
Prices on circles lighter than No. 20 will be quoted on application. Prices of finished circles to be determined by adding the percentage extra to the price of the finished rectangle.	

Resquaring

5 per cent of price of sheet at time of resquaring.

Patent Leveling

25c. per 100 lb.

Inspection

Special inspection by buyer, 10c. per 100 lb.

Extras for Boxing and Crating

	Per Cwt. Net Weight of Sheets
Skeleton crates.....	\$0.40
Skeleton crates, felt lined.....	.50
Tight boxes, unlined.....	.60
Tight boxes, felt lined.....	.70
Bundled with felt edge.....	.10
Crating extras are based on crates containing 500 to 600 lb. For any material packed lighter or heavier than 500 to 600 lb. per crate, an extra charge will be made.	

NOTE—On all sizes, other than standard, when specified in quantities of less than 4000 lb. to the item, prices will be quoted on application.

Miscellaneous

	Extra Per 100 lb.
Full cold rolled and annealed.....	\$0.15
Single pickled, cold rolled and annealed.....	.40
Single pickled, and oiled or limed.....	.35
Hot rolled, pickled and annealed.....	.35
Full pickled, full cold rolled and annealed.....	.60
Blue stovepipe stock.....	.15
Range steel to manufacturers.....	.30
(If patent leveled).....	.55
Blue range steel.....	.50
(If patent leveled).....	.75
Deep stamping or drawing.....	.25
Extra deep stamping or drawing.....	.50
Patent or stretcher leveling.....	.25
Oiling.....	.10
Lime finish.....	.10
Deoxidizing.....	.15
P. A. C. R. and reannealed for tinning.....	.50
Bow socket stock.....	.50
Shovel stock carbon .025 to 0.40.....	.10
Milk can stock.....	.50
Roller leveling.....	.10
Extra box annealing.....	.15
Long ternes, special finish.....	.50

Chain

Base price for $\frac{3}{8}$ -in. common steel proof coil chain, self-colored or blacked, per 100 lb. f.o.b. Pittsburgh, \$8.

Extras

Sizes			
For	5/16	1/4	3/16 in.
Add.....	55c.	\$1.55	\$4.10 per 100 lb.
For.....	1/2	11/16, 13/16, 15/16,	1 1/16,
Deduct.....	7/16	5/8	3/4
	15c.	30c.	40c.
		50c.	60c.
		70c.	60c.

For twist link—Sizes 3/16 to 7/16 in. inclusive, add 50c. per 100 lb. For bright coil chain—Add 25c. per 100 lb.

Sizes	3/16 and $\frac{1}{4}$ in.	5/16 and Larger
For B B quality.....	\$1.25	Advance over proof quality \$1.00 per 100 lb.
For B B B quality....	\$1.75	Advance over proof quality \$1.50 per 100 lb.

Iron Chain: For iron chain, add as follows to price of regular coil:

3/16.....	\$2.00	5/8.....	.50
$\frac{1}{4}$	1.50	3/4.....	.35
5/16.....	1.00	7/8.....	.35
$\frac{3}{8}$.....	.75	1 in.....	.30
7/16.....	.75	1 $\frac{1}{4}$.....	.25
$\frac{1}{2}$, 9/16.....	.50		

Cold Rolled Strip Steel

Base price \$6.50 per 100 lb. for 1 $\frac{1}{2}$ -in. and wider, 0.100 in. and thicker, hard temper, in coils, under 0.20 carbon. Extras to be added to base for size, annealing, cutting, packing, etc., as follows:

Standard Extras—In effect Oct. 25, 1917.

Extra for Thickness

0.100-in. and thicker.....	Base
.050 to 0.099.....	\$0.20
.035 to .049.....	.45
.031 to .034.....	.60
.025 to .030.....	.80
.020 to .024.....	1.10
.017 to .019.....	2.10
.015 to .016.....	2.65
.013 to .014.....	3.30
.012.....	3.95
.011.....	4.20
.010.....	4.65

Extra for Narrow Widths

Under 1 $\frac{1}{2}$ in. to 1 in. Inc.

0.100 and thicker to 0.035.....	\$0.25
.034 to .020.....	.40
.019 to .010.....	.50

Under 1 in. to $\frac{3}{4}$ in. Inc.

.100 and thicker to .035.....	.45
.034 to .020.....	.60
.019 to .010.....	.70

Extra for Cutting to Length

24 in. and Longer

1-in. and wider:	
0.100 and thicker.....	\$0.15
.099 to 0.035.....	.25
.031 to .034.....	.40
.025 to .030.....	.55
.020 to .024.....	.70
.019 to .015.....	1.50
.013 to .014.....	2.00
.012 to .010.....	Coils only

For cutting to lengths under 24 in. triple extras will be added.

Extra for Wide Widths

Wider than 6 in., not over 9 in.—

0.031 to 0.030.....	\$0.15
.025 to .024.....	.35
.017 to .016.....	.50
.013 to .010.....	.50

Wider than 9 in., not over 12 in.—

.035 to .030.....	.40
.025 to .024.....	.50
.017 to .019.....	.50
.015 to .010.....	.50

Wider than 12 in., not over 15 in.—

.036 to .049.....	.25
.035.....	.30
.031 to .034.....	.50
.026 to .030.....	.50
.025.....	.50
.017 to .010.....	.50

*Extras quoted on application.

Boxing or wrapping, 0.15 extra. Minimum charge, 6.50.

Extra for Annealing

0.100 and thicker.....	\$0.45
.050 to 0.099.....	.45
.035 to .049.....	.55
.034 to .020, Inc.....	.70
.019 to .010, Inc.....	No extra for temper

Extras for Small Quantities

On orders or contracts for 18 tons or more, add extras only on items of less than 2000 lb.

3 to less than 18 tons of one size.....	\$0.10
1 to less than 3 tons of one size.....	.25
1000 to less than 2000 lb. of one size.....	.40
500 to less than 1000 lb. of one size.....	1.00
300 to less than 500 lb. of one size.....	2.00
200 to less than 300 lb. of one size.....	3.00
100 to less than 200 lb. of one size.....	5.00

Orders for less than 100 lb. of one size will be accepted only at the full value of 100 lb. Extra for gages lighter than 0.010 quoted on application.

NOTE.—The charge for cutting to length does not relieve buyer from scrap loss, and short pieces left from cutting will be shipped and invoiced at price of long lengths. If lengths over 36 in. are ordered and no short pieces taken, add 10 per cent to net price.

Hot Rolled Finished Strip Steel

Base, f.o.b. Pittsburgh, per 100 lb. \$4.50

Unfinished Hot Rolled Steel for Cold Rolling

Base, f.o.b. Pittsburgh, per 100 lb. \$3.50
Both subject to following list of extras and differentials:

Hot Rolled Finished Strip Steel

Under 0.20 Carbon

In coils, or cut to lengths 4 ft. to 16 ft., including shorter pieces that accrue in cutting.

Width	8-in. and Narrower	6 1/16-in.-10-in.	10 1/16-in.-15-in.	15 1/16-in. and Wider	Slitting	Packing
Gage 12 and heavier, Base	.10	.20	.30	.25	.25	.25
13 gage.....	.10	.20	.30	.40	.25	.30
14 gage.....	.20	.30	.40	.50	.25	.35
15 gage.....	.30	.40	.50	..	.40	.40
16 gage.....	.40	.50	..	..	.40	.45
17 gage.....	.50	.60	..	..	.40	.50
18 gage.....	.60	.70	..	..	.55	.55
19 gage.....	.70	..	..	..	.55	.60
20 gage.....	.80	..	..	..	.55	.65

Cutting to lengths without end pieces..... 10 per cent extra
Cutting to lengths 2-ft.-4-ft..... 10c. per 100 lb. extra
Annealing 30c. per 100 lb. extra

Quantity Extras

Less than 2000 lb. to 1000 lb. inc..... 15c. per 100 lb. extra
Less than 1000 lb..... 35c. per 100 lb. extra
Terms: F.o.b. Pittsburgh. Half of 1 per cent discount for cash in ten days from date of invoice.

Light Rails

Base, per 100 lb. f.o.b. maker's mill, including 10 per cent short lengths, down to and including 24 ft. \$3.00
Subject to following list of extras and differentials for size, quantity, etc.:

Extras for Size

	Per 100 lb. Extra
25 lb. to 45 lb. per yd., inclusive, full carload lots.....	Base
16 lb. and 20 lb. per yd., full carload lots.....	\$0.045
12 lb. and 14 lb. per yd., full carload lots.....	.090
8 lb. and 10 lb. per yd., full carload lots.....	.135

Extras for Quantity

For less than carload lots, down to and including 5 gross tons \$0.045
For less than carload lots, under 5 gross tons..... .05

Extras for Length

Special lengths down to, but not including, 12 ft. \$0.05
Special lengths 12 ft. and under..... .045
For all 30-ft. lengths..... .045

Extras for Bond Drilling and Notching

Bond drill	one hole in each end of web.....	\$0.045
Bond drill	two holes in each end of web.....	.090
Bond drill	one hole in each end of flange.....	.090
Bond drill	two holes in each end of flange.....	.18
Notching		.025

The Embargo on Automobile Alloy Steel

WASHINGTON, Nov. 20.—It is expected that the Automobile Industries Committee will make a report to the War Industries Board during the coming week concerning the minimum amount of chrome steel which the industry should be allowed, to produce a reasonable number of passenger cars and as to the kinds and quantities of war material which automobile plants can supply with the facilities that will be diverted from the manufacture of pleasure cars. This committee, which includes A. W. Copeland, Detroit Gear & Machine Co., chairman; John R. Lee, Ford Motor Co., and Hugh Chalmers, Chalmers Motor Co., has established offices in this city and is making a careful canvass of all manufacturers in the industry.

The original embargo order directed by the War Industries Board, cutting off entirely shipments of chrome steel for the manufacture of pleasure cars, has been modified pending the report of the Automobile Committee, leaving the distribution of this alloy steel in the hands of J. Leonard Replogle, director of steel supply. The War Industries Board has intimated that the Automobile Committee must cut the amount of chrome steel to be used in pleasure cars to less than 40 per cent, and has suggested that the amount used should not exceed 20 per cent of the present consumption. It is believed, however, that the board will permit a gradual reduction and will not insist upon an immediate cut to the minimum.

W. L. C.

OBITUARY

ORLANDO MILLER, age 69, and for many years purchasing agent of the Westinghouse Electric & Mfg. Co., East Pittsburgh, died at his home in Edgewood, near Pittsburgh, on Saturday, Nov. 17. He was connected with the Westinghouse interests for 34 years and most of that time was purchasing agent. He was a member of the Pittsburgh Athletic Association, Duquesne Club, and the Westinghouse Veterans' Association. He is survived by his widow and one son.

ABRAHAM W. STEHMAN, president and treasurer of the B. C. Bibb Stove Co., Baltimore, Md., died on Nov. 9 at his home, aged 78 years. Mr. Stehman became associated with the Bibb concern a great many years ago and in 1894 succeeded the late B. C. Bibb as president.

WILLIAM MOLTRUP, a leading stockholder of the Moltrup Steel Products Co., Beaver Falls, Pa., died suddenly, Monday evening, Nov. 5, in the Pennsylvania Station, Pittsburgh, from heart trouble. He is survived by his widow, two sons and one daughter.

A special appeal for skilled men is being made by the aviation section of the Signal Corps, U. S. A. Office clerks, as well as mechanics are included in a list of 48 vocations. For particulars one should address the Volunteer Bureau, 119 D Street, N. E., Washington, D. C.

The E. I. DuPont DeNemours Co., Wilmington, Del., is preparing to erect a two-story clubhouse, 30 x 72 ft., containing 13 sleeping rooms, dining room, kitchens, etc., for the use of employees of its powder plant at Barksdale, near Washburn, Wis.

The erection of the new steel plant at Ymuiden, Holland, has been deferred until after the war. The Government is to take one-third of the shares, while the other shareholders will be Dutch subjects.

Japan Insists on Better Terms in the Plate and Vessel Deal

WASHINGTON, Nov. 20.—Negotiations between the War Trade Board and the Japanese Government for the transfer to the transatlantic trade of a number of Japanese cargo ships in exchange for the release from embargo of a large quantity of ship plates intended for Japanese yards have been broken off by the refusal of the Japanese officials to accept the Shipping Board's offer for the vessels in question. It is believed negotiations will be renewed, possibly on a different basis, and that the United States will ultimately get the ships and the Japanese shipbuilders the plates.

When this matter was first taken up at the instance of the Japanese Government, which was exceedingly anxious that the shipbuilders of Japan should secure adequate supplies of plates in this country, it was proposed by the Shipping Board to lift the embargo on 100,000 tons of plates in consideration of the placing by Japan in the transcontinental trade, under lease or otherwise, of a dozen or more large cargo vessels. Count Ishii, who conducted the negotiations for the Japanese Government, proposed to sell a certain number of ships to the United States instead of leasing them. This proposition was favorably considered by the Shipping Board, which finally offered \$175 per ton for any amount of tonnage and agreed to release 100,000 tons of steel. The Japanese Government has since received offers of \$300 per ton for several of the ships in question and has therefore declined the tender of the Shipping Board. In a semi-official cablegram from Tokio it is stated that "America's demand for Japanese shipping in return for the concession would virtually destroy Japan's European trade, and while Japan's assistance to her allies will be freely offered, it cannot reach the extent of infringing upon the necessities of her national existence."

The price fixed by the Shipping Board for the Japanese vessels is a maximum figure and it is understood has not been exceeded in any of the contracts taken over for commandeered ships now building in American yards. It is a well-known fact that the cost of construction in the Japanese yards has been substantially less than that prevailing in this country, and was very much lower at the time when the vessels the subject of current negotiations were built. It is quite probable that Japan will ultimately accept a compromise figure from the United States, but it is possible that a larger quantity of ship plates may be insisted upon.

Buys Ingot Mold Department

The Marshall Foundry Co., Pittsburgh, has purchased the stock ingot molds and ingot mold department of the Pittsburgh Iron & Steel Foundries Co. at Midland, Pa. The equipment will be divided between the two ingot mold plants of the Marshall Foundry Co. at Pittsburgh and Josephine, Pa. The acquisition of this department will give the Marshall Foundry Co. an output of about 350 tons of ingot molds at its Pittsburgh works and about 700 tons at its Josephine works, these ranging from 1600 lb. up to 60 tons in weight. Some time ago the Marshall Foundry Co. bought the ingot mold equipment of the Edgewater Steel Co. at Oakmont, Pa., and moved it to its two other plants.

Scrap Board Protests

Reports that sales of some grades of scrap have been made in excess of the Government price have caused the American Board of Scrap Iron Dealers to issue a letter to the trade, advising that this practice, if being indulged in, should be stopped at once and intimating that unless it is the Government will take action to see that it is stopped and punishment provided. Various forms of evasion are being vigorously denounced by reputable scrap dealers.

PERSONAL

John Price Jackson, Commissioner of Labor, Pennsylvania, has been commissioned a major in the United States Army engineers' reserve, and has relinquished his duties under leave of absence. He will be succeeded by L. R. Palmer, chief inspector, as acting commissioner.

Edwin G. Pierce, recently appointed consulting chemist by the Republic Motor Truck Co., Alma, Mich., has completed the equipment of a branch commercial laboratory in that city, which is under the direct supervision of Clyde S. Morgan.

H. M. Fitz has entered the service of the Davenport Locomotive Works, Davenport, Iowa, in the capacity of production engineer.

R. L. Browne, who for the past 15 years has been identified with the electrical and mechanical engineering profession, has recently become associated with the sales department of the Goldschmidt Thermit Co., New York, in the capacity of commercial engineer, after having spent several months in the foundry of that company acquiring a practical knowledge of the Thermit process of welding.

Wilber O. Platt has been elected president of the Joseph Reid Gas Engine Co., Oil City, Pa., succeeding the late Mr. Reid, with whom he was associated for years, latterly for some time being vice-president and superintendent of the company.

Herbert D. Tremper who was recently elected a vice-president of the Federal Export Corporation, New York, has just returned to the United States from France where he has had active supervision of the European branches of the corporation. He made a close study of engineering and manufacturing conditions in France.

Charles C. Tyler, vice-president Remington Arms Union Metallic Cartridge Co., has been placed in charge of all the manufacturing plants of the company, with headquarters in New York.

Edwin H. Williams, foreman of the screw machine department of the Colt's Patent Fire Arms Mfg. Co., Hartford, Conn. was tendered a complimentary dinner at the Hartford Club, Nov. 14, by the executives and foremen in honor of the completion of sixty years of service with the company. Vice-president S. M. Stone, presented Mr. Williams with a purse of gold and a gold watch and chain. Vice-president B. M. W. Hanson and Maj. J. M. Gilbert, U. S. A., were other speakers.

L. R. Brink, superintendent of Barnhart Brothers & Spindler, Chicago, has resigned to accept the position of general manager of The Fort Dearborn Mfg. Co., Sterling, Ill., manufacturer of special machinery, gears and metal stampings.

John A. Green has been appointed superintendent of the steel foundry of the Pittsburgh Crucible Steel Co., Midland, Pa.

Howard G. Benedict has become works manager of the Glenn L. Martin Co., Cleveland, which will shortly begin the construction of airplanes. He was formerly associated in a similar capacity with the Aeromarine Plane & Motor Co., Keyport, N. J., and previously was connected with various automobile and other plants as consulting engineer on factory management.

Willard A. Van Brunt, one of the founders and for many years president of the Van Brunt Mfg. Co., maker of agricultural implements, Horicon, Wis., has resigned because of advanced age. The officers elected at the annual meeting are: President, John Bodden; vice-presidents, A. W. Wilcox and G. W. Mixer; secretary, Harry Marsh; treasurer and general manager, F. H. Clausen. The company is controlled by the John Deere interests of Moline, Ill.

L. T. Harper, representing the Byron Jackson Iron Works, San Francisco, will leave about Dec. 1 for India, where he will spend 18 months establishing agencies for his company and introducing its pumps.

D. W. Dodge, Pacific Coast manager of the Koppel

Sales Co., Inc., is in the East on business. He will be away from home about a month and will visit the iron and steel centers before he returns.

W. O. Renkin, for two years chief engineer of the A. M. Byers Co., Pittsburgh, has resigned to become manager of the engineering department of the Quigley Furnace Specialties Co., 26 Cortlandt St., New York, which specialize in powdered coal equipment. Previous to his connection with the Byers Co., Mr. Renkin spent several years as resident engineer in charge of the organization and construction of the works of the Tata Iron & Steel Co., Sakchi, India.

A. J. Stacey, traffic department, Trussed Concrete Steel Co., Youngstown, Ohio, has been given a position in the United States Ordnance Department. In his new work, he will be connected with the traffic department of Langley aviation field, Hampton Roads, Va. The Trussed Concrete Steel Co., has furnished material for much of the new construction at Langley field.

E. A. Hawks, has been appointed special representative of the Youngstown Steel Car Co., Youngstown, Ohio, in the Detroit territory, and will have his offices in the Dime Bank Bldg., in that city.

J. A. Shorey, General Electric Co., is to address the Engineers' Club of Trenton, N. J., on Thursday evening, Nov. 22, on centrifugal blowing engines.

C. H. Van Dyke has been elected vice-president of the Manown Mfg. Co., Pittsburgh, to succeed H. A. Sechrist, who resigned to become associated with the Mt. Union Refractories Co., Mt. Union, Pa. The Manown Mfg. Co. makes sleeves, nozzles and runner brick.

Edson S. Harris, for seven years with the Midvale Steel Co. as export manager, secretary of the London company and for the past two years district manager of sales in Philadelphia, resigned Nov. 1 and has organized the Philadelphia Steel Products Co. with himself as president and E. M. Taussig, who was his assistant with the Midvale Steel Co., as vice-president and J. N. Wilkins as secretary-treasurer. Mr. Harris has been appointed the Philadelphia representative of the Wellman-Seaver-Morgan Co., Cleveland, which has taken large contracts for the manufacture of condensers, uptakes, stacks and steering engines for submarine destroyers being built by the William Cramp & Sons Ship & Engine Building Co., the New York Shipbuilding Corporation and the Newport News Shipbuilding & Dry Dock Co. The Philadelphia Steel Products Co. will also engage in a general brokerage business in steel products and after the war will establish foreign connections.

Alexander C. Brown, vice-president and general manager of the Brown Hoisting Machinery Co., Cleveland, has been called to Washington to take full charge of the locomotive crane department of the Government. He will be in the department of R. S. Brookings, commissioner of finished products, and will seek to increase the production by distributing locomotive crane orders in plants doing other classes of work but which are fairly well fitted for building cranes. The locomotive crane requirements of the Government and various war industries, including the shipyards, are very heavy, and the capacity of the plants regularly engaged in such work is not sufficient to meet the demand.

Joseph McKay, Jr., for 13 years with the Wheeler Condenser & Engineering Co. and for the past two years with the Pittsburgh Valve, Foundry & Construction Co., has been appointed general sales manager of the Deschanel Engineering Corporation, 90 West Street, New York.

The United States Shipping Board announces that Homer L. Ferguson, president and general manager of the Newport News Shipbuilding and Dry Dock Company, will probably head a staff of practical shipbuilders soon to be named to serve with the Emergency Fleet Corporation. Mr. Ferguson is one of the foremost shipbuilders of the country and it is understood there will be associated with him two other experienced builders, the three being charged with the duty of supervising all the technical work for construction. These appointments will complete the reorganization of the fleet

corporation under Charles Piez, its vice-president, and every effort will now be turned toward quantity production.

J. C. Holding, for 15 years in the bureau of structural shapes and plates, general sales department, Carnegie Steel Co., Pittsburgh, has resigned, effective Dec. 1, and will enter the general sales department of the Midvale Steel & Ordnance Co., Philadelphia, and will be associated with J. C. Neale, general manager of sales. Mr. Holding's first business connection was with the Keystone Bridge Works, Pittsburgh, in 1896, and six years later he went into the sales department of the Carnegie Steel Co., where he has been located ever since.

Daniel Willard, president of the Baltimore & Ohio Railroad and head of the advisory committee of the Council of National Defense, has been appointed by President Wilson as chairman of the War Industries Board to succeed Frank A. Scott, who was recently forced to resign on account of ill-health. Mr. Willard was one of the first of the many prominent business men of the country to volunteer his services to assist the Government in the prosecution of the war and for many months past has spent the greater part of his time in Washington.

Star and Crescent Furnace Sold

The plant of the Star and Crescent furnace at Rusk, Tex., is to be removed to Collinwood, Tenn., by the Tennessee Valley Iron & Railroad Co., which has bought the complete plant, including buildings, stoves, engines, rails and other equipment. Plans for further development include the installation at once of brickmaking machinery and the building of 60 charcoal kilns of 80-cord capacity, which will be followed by the erection of a modern wood distillation plant of 150 to 200 cords capacity. Improvements already existing at the Collinwood location include saw mills, planing mill, etc., and 18 miles of standard gage railroad connecting Collinwood at Iron City with the Florence and Sheffield branch of the Louisville and Nashville system. The company at the Collinwood location owns about 85,000 acres of land in Wayne and Hardin counties containing deposits of brown ore and covered with a large amount of hardwood timber, which assures an unlimited supply of fuel. The completed plant will, it is planned, produce large quantities of wood alcohol, acetate of lime, etc. The furnace will be operated on charcoal and as reconstructed will have a capacity of 100 tons per day. It is hoped to have the plant in operation by March 1, 1918. Dismantling is already under way and shipments of material have begun.

The Tennessee Valley Iron & Railroad Co. officers are: C. N. Brady, president; Thomas S. Bailie, vice-president; R. D. Baker, secretary and treasurer. Among the stockholders are those named and also the estate of J. W. Bailie, the Empire Lumber Co. and D. L. Gillespie of Pittsburgh; H. B. Duncan and E. C. Stewart of Washington, Pa.; Nelson C. Hubbard, W. P. Hubbard and J. C. McKinley of Wheeling, W. Va. The sale of the Rusk plant was negotiated with the new owners by William Yule of the Pioneer Coal & Coke Co. of St. Louis.

Fabricators to Discuss War Problems

A meeting of structural steel fabricators has been called, to be held at the William Penn Hotel, Pittsburgh, Nov. 27. It is understood that besides building and bridge fabricators, fabricators of plates are included, and that matters in relation to the Government needs are to be discussed.

Graham furnace of the Pocahontas Pig Iron Corporation at Graham, Va., which is operated by John B. Guernsey & Co., Inc., was blown in last week on spiegeleisen, which it will produce until about Jan. 1, when the furnace will be burdened for ferromanganese. The entire output for the greater part of the coming year will be taken under a conversion contract by New York and Philadelphia interests.

PRESIDENT IS FIRM

Will Not Permit Strike to Stop Operation of the Railroads

WASHINGTON, Nov. 20.—The placing in President Wilson's hands of the interests of the railroads in the effort to avert a strike for higher wages by engineers, conductors, trainmen and brakemen; definite threats from the War and Navy Departments that if the existing freight congestion continues to delay the production of munitions in the war factories the supreme authority of the Government will be invoked to remedy the present highly dangerous situation; the closing of arguments in the Eastern railroads' 15 per cent advance rate case before the Interstate Commerce Commission, and circumstantial reports to the effect that the Joint Congressional Committee on Interstate Commerce will report early in December in favor of some form of Government ownership or possibly of temporary Federal co-ordination and control of all the carriers, have been among the important developments of the past week. While refraining from any public statement on the subject, the President has plainly intimated to several prominent men who have consulted him that he will not permit any interruption of transportation but will invoke all the authority vested in the Government under its supreme power to wage war to prevent the national disaster that would certainly follow a tying up of the railroads.

The questions at issue between the railroad managers and the brotherhoods will probably be brought to a head within a few days. The President will meet the brotherhood leaders in conference here on Thursday, and it is understood will urge the submission of the question of higher wages to Federal arbitration. The brotherhood leaders, while expressing their willingness to submit the matter to some form of mediation, have refused an unconditional submission to any existing arbitration tribunal.

The brotherhood officials have already presented their case informally in discussions with Judge William L. Chambers, chairman of the United States Board of Mediation and Conciliation, who has acted as President Wilson's representative in preliminary conferences with both sides. The labor officials declare that increased wages "are necessary to maintain the operating personnel of the roads against the inducements of higher wages paid in other industries which have Government contracts" and that "recruiting of railroad regiments for service in France, enlistment in the army and the operation of the draft law also have aided in depleting the number of highly trained railroad men."

Prices on By-Product Coke

The Fuel Administration in Washington has announced fixed prices for by-product coke, which are as follows: \$6 for run of oven; \$7 for selected foundry; \$6.50 for crushed oven over one-inch size. Except for the by-product coke produced in New England, maximum prices of each grade f.o.b. point of production shall be the sum of the base price for the grade and the freight rate from the competing bee-hive coke district, which takes the lowest rate to the point where such by-product coke is used. The maximum prices for gas coke for industrial uses shall be fixed at the price established by the Fuel Administration for the corresponding grade produced in by-product ovens. Commenting on the fixing of prices, the Fuel Administration points out that the prices for by-product coke are made the same as those for bee-hive coke to stimulate production of by-product coke and the coal tar products involved in such production for war purposes.

The Canadian Government has placed an embargo on the shipment of iron and steel from Canada save in exceptional cases in which licenses may be granted by the Customs Department. This action is due to the great shortage of these commodities for munitions, shipbuilding and other operations.

SHORT HOURS FAVORED

Administration Announces Policy Regarding Treatment of Labor

WASHINGTON, Nov. 20.—An important pronouncement of the Administration's policy as to the treatment of labor is contained in a summary of an extraordinary general order entitled "Suggestions for Arsenal Commanders and Manufacturers," just made public by the War Department. The order, while not mandatory in terms, is designed especially for the government of private establishments making munitions and other war material and provides a code of shop rules that includes not only hours of labor, wage standards, holidays, etc., but also sanitation of plants, temperature control, and restrictions upon the employment of women and children. The summary follows:

While circumstances are not such as to render appropriate the issuance of definite orders upon this subject at the present time, the following suggestions are commended to the careful consideration of arsenal commanders and manufacturers executing orders for this department.

In view of the urgent necessity for a prompt increase in the volume of production of practically every article required for the conduct of the war, vigilance is demanded of all those in any way associated with industry, lest the safeguards with which the people of this country have sought to protect labor should be unwisely and unnecessarily broken down. It is a fair assumption that for the most part these safeguards are the mechanisms of efficiency. Industrial history proves that reasonable hours, fair working conditions and a proper wage scale are essential to high production. During the war every attempt should be made to conserve in every possible way all of our achievements in the way of social betterment.

In the preparation of the following memorandum no effort has been made to establish, or even to suggest, definite rules of conduct. The memorandum presents what may be considered a fair—if tentative—basis of action.

The department wishes to be assured that schedules of hours obviously excessive, or wage scales distinctly unfair, or working conditions such as should not be tolerated, will certainly be brought to its attention.

HOURS OF LABOR

Daily hours.—The day's work should not exceed the customary hours in the particular establishment or the standard already attained in the industry and in the community. It should certainly not be longer than 10 hours for an adult workman. The drift in the industrial world is toward an eight-hour day as an efficiency measure. It has also been shown that hours of labor must be adapted to the age and sex of the worker, and the nature of the occupation.

Overtime.—The theory under which we pay "time and a half" for overtime is a tacit recognition that it is usually unnecessary and always undesirable to have overtime. The excess payment is a penalty and intended to act as a deterrent. There is no industrial abuse which needs closer watching in times of war.

Shifts in continuous industries.—Eight hours per shift should be a maximum in continuous twenty-four-hour work.

Half holiday on Saturday.—The half holiday on Saturday is already a common custom in summer, and it is advantageous throughout the year, especially if the work day be ten hours long the other days of the week. The working period on Saturday should not exceed five hours. An occasional shift of two or three hours on Saturday afternoons is unobjectionable, if essential, but the additional hours should be regarded as overtime and paid for on that basis.

Hours posted.—It is desirable that the hours of labor for every tour should be posted.

Holidays.—The observance of national and local holidays will give opportunity for rest and relaxation which tend to make production more satisfactory.

One day of rest in seven.—One day of rest in seven should be a universal and invariable rule.

STANDARDS IN WORKROOMS

Protection against hazards and provisions for comfort and sanitation.—Existing legal standards to prevent danger from fire, accident, occupational diseases, or other hazards, and to provide good light, adequate ventilation, sufficient heat, and proper sanitation should be observed as minimum requirements.

Location of toilets.—All toilets should be sanitary and readily accessible.

Extreme temperatures.—Those processes in which workers are exposed to excessive heat—that is, over 80 degrees—or

excessive cold—that is, under 50 degrees—should be carefully supervised so as to render the temperature conditions as nearly normal as possible. When extreme temperatures are essential, workers should not only be properly clothed but avoid sudden changes.

Lights.—If any light is at the level of the worker's eyes, it should be so shaded that its rays will not directly strike the eyes.

WAGES

Wage standards.—Standards already established in the industry and in the locality should not be lowered. The minimum wage rates should be made in proper relation to the cost of living, and in fixing them it should be taken into consideration that the prices of necessities of life have shown great increases.

NEGOTIATION BETWEEN EMPLOYERS AND EMPLOYEES

The need of preserving and creating methods of joint negotiations between employers and groups of employees is especially great in the light of the critical points of controversy which may arise in a time like the present. Existing channels should be preserved and new ones opened, if required, to provide easier access for discussion between an employer and his employees over controversial points.

STANDARDS FOR EMPLOYMENT OF WOMEN

Hours of labor.—Existing legal standards should be rigidly maintained, and even where the law permits a nine or 10-hour day, effort should be made to restrict the work of women to eight hours.

Prohibition of night work.—The employment of women on night shifts should be prevented as a necessary protection, morally and physically.

Rest periods.—No women should be employed for a longer period than four and a half hours without a break for a meal, and a recess of 10 minutes should be allowed in the middle of each working period.

Time for meals.—At least 30 minutes should be allowed for a meal, and this time should be lengthened to 45 minutes or an hour if the working day exceeds eight hours.

Place for meals.—Meals should not be eaten in the workroom.

Saturday half holiday.—The Saturday half holiday should be considered an absolute essential for women under all conditions.

Seats.—For women who sit at their work, seats with backs should be provided unless the occupation renders this impossible. For women who stand at work, seats should be available and their use permitted at regular intervals.

Lifting weights.—No woman should be required to lift repeatedly more than 25 pounds in any single load.

Replacement of men by women.—When it is necessary to employ women in work hitherto done by men, care should be taken to make sure that the task is adapted to the strength of women. The standards of wages hitherto prevailing for men in the process should not be lowered where women render equivalent service. The hours for women engaged in such processes, of course, should not be longer than those formerly worked by men.

Tenement house work.—No work shall be given out to be done in rooms used for living purposes or in rooms directly connected with living rooms in any dwelling or tenement.

STANDARDS FOR EMPLOYMENT OF MINORS

Age.—No child under 14 years of age shall be employed at any work under any conditions.

Hours of labor.—No child between the ages of 14 and 16 years shall be employed more than eight hours a day or 48 hours a week, and night work is prohibited.

Federal child labor law.—These and other provisions of the Federal child labor law must be strictly observed.

Minors under 18.—Minors of both sexes under 18 years of age should have the same restrictions upon their hours as already outlined for women employees.

Liberty Bond Sales

The recently organized Auxiliary Council of National Defense of the United Alloy Steel Co., Canton, Ohio, made a fine record in the last Liberty bond sale by selling \$247,000 worth to subscribers, representing 95.16 per cent of the employees.

The subscriptions made by the employees of the principal plants of the Link-Belt Co., and by the company itself, amounted to \$269,000, divided as follows: Indianapolis, \$104,300; Philadelphia, \$71,300; Chicago, \$61,100; Link-Belt Co., \$32,300.

The subscription of the Vanadium-Alloys Steel Co., Pittsburgh, for the second Liberty loan amounted to the handsome total of \$514,000.

TOLUOL FROM CITY GAS

Manufacture to Be Conducted on Extensive Scale for Government

About two years ago, there was great interest manifested in the discovery of a process for making toluol from crude oil, and claims were made that while the production was not strictly a commercial one, still in a National emergency, this process was the great back log and when the need came, the material could be rapidly produced. The emergency has arrived, and the Nation needs millions of gallons of toluol for itself and Allies. In the meantime, there has been going on without any publicity a development in toluol manufacture which bids fair to be of the utmost importance to the Nation in the supply of tri-nitro-toluol. Early in 1915, the Koppers Co. of Pittsburgh, which at that time was building a large number of by-product coke plants, and in connection with which it was also building benzol and toluol plants, started in the laboratories at the Mellon Institute, Pittsburgh, an investigation into the recovery of toluol from carbureted water gas, the gas made in all the large cities of the country by the gas companies for domestic use.

Experiments were started in a number of plants and it was successfully demonstrated that in this process there was a virgin field for the recovery of large quantities of toluol. The conditions existing in water gas plants were very different from those in by-product coke plants, and special apparatus and special methods had to be devised for the successful recovery of toluol. About this time, the Pittsburgh By-Product Coke Co. was organized, an operating company, associated with the Koppers Co., and a plan was formed in conjunction with the gas light company at Washington, to erect the first plant at the West station of that company, to effect the removal of toluol from 5,000,000 cu. ft. of carbureted water gas per day. This plant was placed in operation on July 14, 1916, since which date there has been secured approximately 200,000 gallons of toluol. While this plant was the first to use this process, and many improvements increasing the efficiency and economy of operation have been introduced, the first plant was so designed that it has proved to be a commercial and technical success, equaling the results promised by the laboratory methods. Since that time, the Koppers Co. has built a number of these plants, as follows: two plants at Newark, N. J., one at Paterson, N. J., one at Jersey City, N. J., two plants at Trenton, N. J., two at Rochester, N. Y., one at Chicago, and one at Evanston, Ill.

Now that the Government has found what an enormous amount of toluol is required and that the tri-nitro-toluol is the most efficient and most satisfactory explosive, the Ordnance Department of the U. S. Army has taken hold of the situation. It finds that every by-product coke oven plant in the country is or has arranged to produce toluol to the utmost capacity, and that the remaining needed toluol must be secured from city gas. Seventy-two plants are available for this recovery distributed over the entire country. Last week, the Koppers Co. arranged with the Government to build "stripping" plants in a number of large cities, and many more are being designed and estimated upon. The plans for securing toluol from these sources involve the use of excess refining capacity in all the by-product coke plants of the country. It is fortunate that in the present National emergency there exists in America a large organization which with its large number of technical experts, engineers and constructors, is able to take hold of the situation and push the production of toluol to the limit.

CANVASS OF REGISTRANTS

Industrial Managers Will Be Informed as to Conscription Plans

WASHINGTON, Nov. 20.—Provost Marshal General Crowder has formally announced the policy to be pursued in making the second draft of recruits for the national army who will be assigned to cantonments next March. In this connection he has made public the text of a questionnaire, which is to be sent to all registrants, the answers to which will be used as a basis for the classification of the 9,000,000 whose names have been entered upon the War Department's register into five grades of eligibility for war service based upon their skill, experience, present occupation, and condition with respect to dependents. As already foreshadowed in this correspondence, the plan adopted for the second call differs in all material respects from that employed in the first draft and one of its chief aims is to conserve the skilled labor of the country for use in the industries regarded as essential to the conduct of the war.

The experience of the War Department in securing information concerning the occupations and experience of the recruits embraced in the first call after the men were actually in cantonments, instead of before they were selected for service, has convinced the officials that a vast amount of time can be saved and the labor of the exemption boards reduced to an almost negligible amount by a careful canvass of the registrants before the second call. In this way the sifting process will take place before the men have been called from their present occupations and in a large proportion of cases those entitled to exemption will be informed of that fact in time to relieve them of the necessity of making any preparation for quitting their present tasks. A result of much importance will be the knowledge on the part of the managers of industries contributing to the conduct of the war that their labor will not be demoralized or their organizations invaded, at least until all unemployed men and those engaged in non-essential industries have been called to the colors.

Of very great importance to the general industries of the country, whether contributing directly to the war or not, is the question of the treatment of registrants having dependents or possessing sufficient means to provide for them in the event of being called into service. President Wilson has taken a personal interest in the framing of this feature of the regulations with a view to exempting for as long a period as possible men who have wives, children, mothers, or sisters actually dependent upon them. The War Department, in treating this phase of the matter, proposes to grant exemptions on the basis of full information as to the registrant's ability to provide for his family and other dependents from property or savings now in possession. The inquiries included in this series are of the most searching character.

The questionnaires are now being sent out to local boards, which, in turn, will mail them to the registrants in their respective districts, so that within the next 30 days they will probably be received by all the registrants. The forms must be filled out within seven days from the date of receipt, failure to comply with this regulation being a misdemeanor punishable by fine or imprisonment for one year and resulting in loss of valuable rights and, in the discretion of the Provost Marshal General, in immediate induction into military service.

The Aluminum Ore Co., East St. Louis, Ill., will surrender three tugs and 20 freight barges to the Government to transport knocked-down freight cars from Pittsburgh, to New Orleans, for shipment thence to France. The barges and tugs have been used in transporting bauxite from the Arkansas fields of the company to East St. Louis. The release of the equipment will aid in reducing congestion on the rail lines to New Orleans. It will also reduce the transportation cost about 20 per cent on the freight cars shipped thus.

The Southern Car Co., High Point, N. C., has received a contract from the Government for open cars totaling about \$1,000,000. The company is planning for an immediate reorganization and the reopening of its works, recently closed, to construct the cars.

Machinery Markets and News of the Works

WAR DEMANDS INCREASE

Selling Largely Restricted to Government Needs

A Number of Machine-Tool Companies Decline to Bid on Equipment Unless Buyer Can Show Priority Certificate

Demands for machine tools for the manufacture of war equipment show an increase in several markets, notably in the Central West. Chicago, Cleveland and Cincinnati builders and dealers report an exceptional demand. In the East, the business is somewhat "spotty," but there is nevertheless a large inquiry in volume, although the individual inquiries are fewer in number. Several machine-tool builders have notified their selling agents to bid on nothing but work that is directly or indirectly for the Government. The Government is not permitting tools to leave the country except when the need for our Allies or for American repair shops in France is as urgent as for our own war plants. The Ordnance Division of the Army is finding it extremely difficult to obtain a sufficient number of large machine tools for equipping gun plants such as the Watertown Arsenal and the country is being combed for equipment suitable for the purpose. The scarcity of tools is making it necessary for the Government to anticipate its munitions requirements for a considerable period. For example, several orders placed last week for shell-making tools will not be delivered until next July. As an example of the volume of business being done in some lines, a machine-tool sales office in New York last week had the biggest sales in its history, the total for the week exceeding that done in a whole year in pre-war times. A Cleveland builder reports that its October domestic sales broke all records.

One of the largest inquiries in New York is that of the International Arms & Fuse Corporation, Bloomfield, N. J., which has a 6-in. shell contract. Its requirements in lathes alone total about 225 to 250. Shell contracts have been awarded to the American Can Co., American Car & Foundry Co., Symington-Anderson Co., New York Air Brake Co., Worthington Pump & Machinery Corporation, Bartlett & Hayward Co., Baldwin Locomotive Works and the General Electric Co. The Snead & Co. Iron Works, Jersey City, N. J., has an Allied Government shell order and is buying tools. New purchases of the Worthington Pump & Machinery Corporation will be more than \$1,000,000. The Scovill Mfg. Co., Waterbury, Conn., has been buying heavily for fuse work. The Bartlett & Hayward Co., Baltimore, placed additional orders last week. Very large orders have been placed by the Blake & Knowles plant of the Worthington Pump & Machinery Corporation for building pumps for 150 submarine destroyers.

The newest Government development is the Pica-

tinny Arsenal, near Dover, N. J., where new shops are being built. Twenty 10-ton cranes have been purchased and machine-tool equipment will be bought soon.

In Chicago there has been large buying of machine tools for the Rock Island Arsenal. The Four Lakes Ordnance Co., Madison, Wis., will make purchases aggregating at least \$325,000 and will build 20 large lathes under its own auspices for work on 300 5-in. naval guns. Dodge Bros., Detroit, have been buying heavily in the Central West markets. Their inquiry calls for 250 milling machines. A considerable number of lathes, planers and boring mills have been purchased. Dodge Bros. will make 155-mm. hydro-pneumatic recoil slides. Its plant will cost more than \$2,000,000. The International Harvester Co. has placed orders in Chicago for miscellaneous equipment for its Akron, Ohio, plant. The American Shipbuilding Co. will build on the Great Lakes 36 3500-ton ocean-going steamers for the Emergency Fleet Corporation. Its South Chicago shipyard will be considerably enlarged. Buying in Chicago is confined to war requirements and is without precedent in volume in that section of the country.

Besides large purchases by Dodge Bros., the Cincinnati market has been featured by fairly large inquiries from Dayton manufacturers, who are engaged in munitions work. About the only export orders now being booked by Cincinnati machine-tool builders are for American repair shops in France.

Among the inquiries in the Cleveland market is one from the F. B. Stearns Co., Cleveland, for about 25 machines for airplane motor work. The American Brake Shoe & Foundry Co., Erie, Pa., has inquired for a round lot of lathes for 6 in. shell manufacture.

In New England all machine-tool builders are loaded with orders to the saturation point. It is reported that the Groton Iron Works, New London, Conn., which has Government contracts for steel and wooden ships, will be in the market for more equipment, the Government having authorized the expenditure of \$3,000,000 for expansion of its plants.

Large orders for cranes are being placed. The Stone & Webster Engineering Corporation has awarded to the Pawling & Harnischfeger Co., Milwaukee, Wis., an order for 17 for the Watertown Arsenal. The Federal Shipbuilding Co., New York, is expected to close for 10 shop cranes this week. The Worthington Pump & Machinery Corporation is closing for 38 small cranes for its East Cambridge, Mass., pump works. The International Shipbuilding Corporation, Orange, Tex., is in the market for 20 3-ton, 2-motor, I-beam hoists for gantry cranes. An order for 18 single I-beam cranes and hoists has been awarded to the Detroit Hoist & Machine Co. by the Aberthaw Construction Co. for shops of the Fore River Shipbuilding Corporation. The American International Shipbuilding Corporation has bought seven 10-ton shop cranes from the Northern Engineering Co., Detroit. The Baldwin Locomotive Works has bought cranes for shipment to

Vladivostok, Siberia, where its new locomotive shop will be located. Other smaller crane business is reported in the local market reports.

New York

NEW YORK, Nov. 20.

Government shell and gun work has been the principal factor in machine-tool inquiry of the past week. The International Arms & Fuse Corporation, Bloomfield, N. J., will build 200 or 400 new tools, its list calling for 225 to 250 lathes, principally 24-in. This company's contract, announced last week as being for 75 mm. shells, has been changed to 6-in. Shell contracts are reported to have been awarded to the American Can Co., American Car & Foundry Co., Symington-Anderson Co., New York Air Brake Co., Worthington Pump & Machinery Corporation, Bartlett & Hayward Co., Baldwin Locomotive Works and the General Electric Co. The Sneed & Co. Iron Works, Jersey City, N. J., has received a shell contract from an allied government and is buying new equipment. The Scovill Mfg. Co., Waterbury, Conn., has a time fuse contract and has been placing large orders for tools.

Machine-tool buying in smaller volume has been done by the Oxweld Acetylene Mfg. Co., Newark, N. J.; the Lachernay Carburetor Co., Paterson, N. J.; the General Ordnance Co., Derby, Conn., and the Kinney Mfg. Co., Boston. M. J. Gourland, 120 Broadway, New York, is buying for the Brasier automobile plant in France. The Blake & Knowles plant of the Worthington Pump & Machinery Corporation, East Cambridge, Mass., has been continuously placing orders for several weeks.

Important additions are being built by the Stone & Webster Engineering Corporation at the Picatinny Arsenal, near Dover, N. J. Twenty 10-ton cranes have been purchased by the Government from the Whiting Foundry & Equipment Co. for new shops, the foundations for which have just been laid. Machine-tool equipment will be inquired for soon.

The Federal Shipbuilding Co., which is building its plant on the Hackensack Meadows so rapidly that it will soon be ready to lay the keels of 10 standardized steel ships for the Emergency Fleet Corporation, is in the market for equipment for its new forge shop, including steam hammers and hydraulic machinery. A list of 10 cranes for shops is still pending, but will probably be placed this week.

The Stone & Webster Engineering Corporation, Boston, has placed with the Pawling & Harnischfeger Co., Milwaukee, Wis., an order for 17 shop cranes for the Watertown Arsenal. The remainder of the 46 cranes on which bids were taken will be placed soon. Orders are being placed by the Blake & Knowles plant of the Worthington Pump & Machinery Corporation, East Cambridge, Mass., for 38 cranes for new shops, which include a brass foundry, machine foundry and machine-shop extensions. This plant has received the contract for pumps for 150 submarine destroyers. The list called for bids on three 1-ton, 14 2-ton, 16 3-ton, one 4-ton, three 5-ton and one 10-ton cranes.

Other crane business includes an inquiry from the International Shipbuilding Corporation, Orange, Tex., whose representatives were in New York last week, for 20 3-ton, 2-motor I-beam hoists for gantry cranes, which the company is building itself at its shipyard. Deliveries were asked for beginning in three weeks, and on this account the company's representatives found difficulty in placing the order. An order for 18 single I-beam cranes and hoists, 2-motor, has been awarded to the Detroit Hoist & Machine Co., Detroit, by the Aberthaw Construction Co. for the shops of the Fore River Shipbuilding Corporation. The Stone & Webster Engineering Corporation has bought a 20-ton Ohio locomotive crane for the Watertown Arsenal. The Oscar Daniels Co., Woolworth Building, New York, has received a contract for fabricated steel ships from the Emergency Fleet Corporation and is preparing plans for a shipyard at Brunswick, Ga. It is expected that its crane and machinery requirements will be made known soon. The Georgia Railway & Power Co., Brunswick, Ga., has bought a 50-ton crane, and the General Electric Co. has also bought a 50-ton crane, both of these orders going to the Northern Engineering Co., Detroit. Westinghouse Church Kerr & Co., New York, are in the market for a 10-ton and a 15-ton traveling crane for a shop they are erecting in Cleveland.

Liebovitz & Stark, operating the East New York Cornice Works, 2042 Union Street, Brooklyn, N. Y., have purchased the adjoining lot, 80 x 95 ft., which, it is said, will be used for additions.

The W. S. Wilson Corporation, New York, has been incorporated with a capital of \$50,000 to manufacture hard-

ware, etc. E. A. and H. H. Hirshon, and W. S. Wilson, 90 St. Marks Avenue, Brooklyn, are the incorporators.

The Tidewater Marine Engine & Construction Co., New York, has been incorporated with a capital of \$10,000 to manufacture marine engines, etc. T. F. Haggerty, W. Brown and L. W. Davidson, 18 Christopher Street, are the incorporators.

The Standard Concrete Machinery Co., 233 Broadway, New York, manufacturer of concrete machinery, has increased its capital from \$100,000 to \$250,000. Carlton C. Valentine is president.

The Lexay Co., New York, has been incorporated with a nominal capital of \$5,000 to manufacture automatic machinery. M. Sindel, A. Roseman and S. V. Heimberger, 299 Broadway, are the incorporators.

The Liberty Phonograph Co., Brooklyn, has been incorporated in Delaware with capital of \$1,500,000 to manufacture talking machines. Alfred A. Case, Brooklyn, and Dudley E. Case, Jersey City, N. J., are the incorporators.

The Charles Hartmann Co., operating a sheet metal works at 985 Dean Street, Brooklyn, has increased its capital from \$10,000 to \$50,000.

The Gun Corporation, New York, has been incorporated with a capital of \$25,000 to manufacture machine guns. E. J. Nathan, Jr., B. Howie and M. L. Macauley, 128 Broadway, are the incorporators.

Stephen Ransom, operating a marine repair works at 401 West Street, New York, will build a four-story addition, about 64 x 81 ft., to cost \$60,000, to be used for a boiler works.

The Limited Steel Products Corporation, New York, has been incorporated with a capital of \$60,000 to manufacture talking machines. The incorporators are S. P. Durenheimer, O. C. Deutscher and F. C. Canfield, 341 Fifth Avenue.

The Greater New York Metal Box Co., operating a plant at 143 West Nineteenth Street for the manufacture of metal boxes, etc., has been incorporated with capital of \$20,000. L. Kossoy and P. Unger, 2512 Seventh Avenue, are the incorporators.

The Stoddard Union Co., New York, has been incorporated with a capital of \$100,000 to operate a foundry. Earl O. Aspin, Albert Hild and Frank B. Potterton, New York, are the incorporators.

The United Metals Corporation, Brooklyn, has been incorporated with a capital of \$500,000 to manufacture metal products. J. A. Burns, R. L. Gray and G. K. Wilson, 32 Washington Place, are the incorporators.

The Endicott Forging & Mfg. Co., Endicott, N. Y., has increased its capital from \$100,000 to \$200,000.

The Twin Energy Engine Corporation, Albany, N. Y., has been incorporated with a capital of \$200,000 to manufacture engines. H. J. White, W. H. Schneider and O. Perrault, Albany, are the incorporators.

The Roberts Safety Water Tube Boiler Co., Red Bank, N. J., manufacturer of water tube boilers, has had plans prepared for the erection of a one- and two-story, reinforced-concrete addition, about 80 x 140 ft.

The American Shell Co., 350 Twenty-first Avenue, Paterson, N. J., will erect a one-story addition to cost about \$13,000.

L. Adler & Co., New Brunswick, N. J., have been incorporated with a capital of \$25,000 to manufacture electrical and gas fixtures. Louis Adler, Bound Brook; Louis P. Ruck and Robert Rosen, New Brunswick, are the incorporators.

The Guilmette-Underwood Brass Foundry Co., Elizabeth, N. J., recently organized, has commenced the operation of a new plant at 160 East Jersey Street, to specialize in the production of aluminum and brass castings, metal patterns, etc.

The General Electric Co., Newark, has acquired property at Seventeenth Avenue and Boyd Street, adjoining its present works, for extensions. It is now building a four-story and basement, reinforced-concrete plant, about 80 x 525 ft., for its Edison Lamp Works division. The new plant will cost about \$400,000.

The T. B. Toy Co., Newark, has been incorporated with a capital of \$125,000 to manufacture toys. Harry C. Tonks and Phillip C. Brooks, Newark, are the incorporators.

The Newark Model & Pattern Shop, Newark, has been organized to operate a plant at 680 South Eleventh Street. Francis DeGruchy, 529 Twenty-first Street, Irvington, heads the company.

The DeVoe-Smith Co., Newark, has been incorporated with a capital of \$50,000 to manufacture automobiles. Prescott S. Smith and Alonzo DeVoe, Newark; and Lester A. DeVoe, Ridgewood, are the incorporators.

The Upson-Walton Co., 462 Riverside Avenue, Newark, manufacturer of wire rope, will build a one-story addition, 35 x 73 ft.

The American File Reclaiming Co., Newark, has been incorporated with a capital of \$250,000 to manufacture files. William J. Magee and Isidor Niner, New York, are the incorporators.

The Newark Gear Cutting Machine Co., 69 Prospect Street, Newark, has completed plans for the erection of an addition to its machine shop.

The Butterworth-Judson Corporation, Avenue R, Newark, N. J., will build a new one-story machine and pipe shop, 50 x 90 ft., to cost \$8,000.

The Sprague Electric Co., East Orange, N. J., manufacturer of motors, will build a new one-story power plant at its works to cost \$20,000.

The New York Revolving Portable Elevator Co., 346 Garfield Avenue, Jersey City, N. J., manufacturer of elevators, will build a one-story addition to its plant.

The Bayonne Brass Foundry Co. has been organized to operate works at 75 Broadway, Bayonne, N. J. W. E. Oakley heads the company.

The American Radiator Co., Bayonne, is said to be planning to devote its local works at the foot of East Forty-ninth Street to the production of guns for the Government, particularly for naval service.

The Leonard Sheet Metal Works, Head Ferry, Hoboken, N. J., has increased its capital from \$150,000 to \$500,000.

The Perfect Bobbins & Scalping Works, West Hoboken, N. J., has been organized to manufacture bobbins, etc. Peter Balzerino, 512 Palisade Avenue, Weehawken, heads the company.

New England

Boston, Nov. 19.

New England machine-tool builders have almost reached the saturation point on orders in hand. Little new plant extension is under way in comparison with the business being done. Nearly every company is so busy with orders for Government work, direct or indirect, that it is virtually impossible to produce machines for their fellow machine-tool builders or for other numerous metal-working industries of this section. This and the shortage of labor are limiting the number of new factory projects.

Government plants and those directly concerned in munitions manufacture are the chief local purchasers of tools. Reports agree that there is an increased demand for the smaller tools. It is expected that there will be a greatly increased production of small tools, jigs, fixtures and gages in the next three or four months and sales of tool-room machinery will boom.

Much newspaper publicity has been given about the strikes of structural workers on Government jobs at Watertown, Squantum and elsewhere, and some fear that these might increase unrest in the machinist crafts, but the strikers have returned to work on all the jobs except at Squantum, and it is believed that the danger period has passed. The only strike of moment among machinists is at the plant of the Morse Twist Drill Co., New Bedford, Mass., where about 900 men are out. Henry B. Endicott, executive manager of the Massachusetts Public Safety Commission, acting as arbiter, has refused the machinists of the various shops of the Boston & Maine Railroad a further increase of three cents per hr., deciding that the advance of five cents per hr. recently granted them was as large as was justifiable. This may lead to further complications, as the machinists threaten to reopen the case.

It is reported that the Government is planning to spend about \$3,000,000 on the plants of the Groton Iron Works, at New London and Noank, Conn., at which merchant ships are to be built. About 2000 more men are being sought for these plants and an extensive housing project will be necessary to take care of the increased working force. Several new buildings are nearing completion.

The Stanley Motor Carriage Co., Newton, Mass., is building an addition, 64 x 100 ft., two stories. This is the first step in the expansion of the plant, following the recent reorganization of the company, which has been manufacturing steam motor cars since 1901. Prescott Warren is president.

The Gunning Boiler & Machine Co., New Bedford, Mass., has awarded a contract for a four story addition, 36 x 124 ft., to be used as a machine shop and foundry.

The Worthington Pump & Machinery Corporation, Blake & Knowles works, East Cambridge, Mass., has awarded contracts for a one story foundry, 81 x 121 ft., and storage building, 42 x 200 ft.

The LaPointe Engineering Co., New London, Conn., engines, etc., has been incorporated with authorized capital stock of \$100,000. The incorporators are Joseph N. LaPointe, Charles S. Amadon and P. LeRoy Harwood, all of New London.

The Seymour Metal Goods Co., Seymour, Conn., has increased its capital stock from \$100,000 to \$200,000.

The Universal Sickle Bar Co., Boston, has been incorporated with authorized capital stock of \$100,000. Louis N. Wheelock is president Delano F. W. Douglas, 185 Devonshire Street, treasurer.

The Harrington Cutlery Co., Southbridge, Mass., has begun work on an addition to its plant.

The Eastern Machine Works, Revere, Mass., has been incorporated with authorized capital stock of \$100,000. Edward A. Guay is president and Edward R. Berry, Malden, treasurer.

The Colt's Patent Fire Arms Mfg. Co., Hartford, Conn., has awarded a contract for a one story addition, 50 x 250 ft.

The Nicholson File Co., Providence, R. I., has secured permits to build four additions: 42 x 142 ft. and 67 x 147 ft. two stories; 11 x 29 ft. and 39 x 40 ft., one and two stories.

The machinery of the Derby, Conn., plant of the Maxim Munitions Co. is being removed by the United States Cart-ridge Co. to its main plant at Lowell, Mass.

The Otto Heineman Phone Supply Co., 25 West Forty-fifth Street, New York, has awarded a contract for a factory, 40 x 100 ft., two stories, at Putnam, Conn.

Frank Wheeler & Son, Meriden, Conn., machinery, have been incorporated with authorized capital stock of \$100,000 by Frank Wheeler and others.

The Baldwin Chain & Mfg. Co., Worcester, Mass., has let a contract for a one story addition, 35 x 52 ft.

The Biddeford Shipbuilding Co., Biddeford, Me., has awarded a contract for two buildings, 34 x 66 ft., two stories and 22 x 24 ft., one story.

The Nutter & Barnes Co., manufacturer of metal cutting-off machines, has moved its plant to Greenfield, Mass., forming a part of the machinery division of the Greenfield Tap & Die Corporation.

Philadelphia

PHILADELPHIA, Nov. 20.

For various Government contracts a good volume of machine-tool and machinery business is being placed in this district. Shipbuilding and munitions are the two principal sources of inquiry. The American International Shipbuilding Corporation has placed an order for seven 10-ton shop cranes with the Northern Engineering Co., Detroit, and it has also bought equipment for its plate and angle shop as follows: One 30-ft. bending roll, 8 ft. straightening roll, six radial drills, six radial countersinking drills, three angle shears, eight punches, four shears, one friction saw. The New York Shipbuilding Corporation, Camden, N. J., continues to place orders and the William Cramp & Sons Ship & Engine Building Co., Philadelphia, is buying on a smaller scale. The former has bought two 15-ton Ohio locomotive cranes.

Requirements of the Worthington Pump & Machinery Corporation, Jeannette Works, Hazelton, Pa., for its new shell contract, will total more than \$1,000,000. The Bartlett & Hayward Co., Baltimore, Md., is continuing to buy for munitions work. The Westinghouse Air Brake Co. has been placing large orders for several weeks for its plant at Swissvale, Pa., which will build airplane engines. The Marlin-Rockwell Corporation is buying for its Standard Roller Bearing plant in Philadelphia. The Roller-Smith Co., Bethlehem, Pa., has bought a few tools for work on ammeters for airplane engines.

The large crane order of the Baldwin Locomotive Works has not yet been placed, but this company is doing other buying for this country and Russia. Six 50-ton and two 20-ton cranes will go to the new locomotive shop to be built at Vladivostok, Siberia.

The Philadelphia & Reading Railroad Co. has plans drawn for a round house at South Bethlehem, Pa. The S. S. White Dental Mfg. Co., Philadelphia, will build an addition to its factory for making dental instruments. The Brown Pyrometer Co., Philadelphia, will also build an addition. All three companies are expected to buy some new equipment.

The Acme Gear Co., Philadelphia, has been incorporated with a nominal capital of \$5,000 to manufacture gears. Harry C. Cole, Philadelphia, is the principal incorporator.

W. T. White, Philadelphia, has awarded a contract for the construction of a new one-story machine shop, 215 x 250 ft., at Twentieth Street and the Erie Avenue, to cost about \$130,000. The Watson Engineering Co., Philadelphia, is the contractor.

The S. White Dental Mfg. Co., Chestnut Street, Philadelphia, manufacturer of dental instruments, etc., is building a four-story and basement addition to its plant, about 60 x 75 ft., on De Quince Street, to cost \$75,000.

The William Cramp & Sons Ship & Engine Building Co., Philadelphia, will build three shop additions to its plant at East Richmond and Norris streets, to cost about \$35,000.

The Beach Automobile Rotary Safety Brake Co., Philadelphia, has been incorporated in Delaware with capital of \$1,000,000 to manufacture safety brakes, etc. Mahlon Van Bouskirk and Henry R. Heyl, Philadelphia, and A. P. Stevenson, Wilmington, Del., are the incorporators.

Schaum & Uhlinger, Inc., Glenwood Avenue and Second Street, Philadelphia, manufacturer of machinery and parts, has filed plans for improvements in its plant to cost about \$5,000.

The Reeves Foundry Co., Trenton, N. J., will erect two small additions on North Logan Avenue.

The Hydro-Submersible Corporation of America, Philadelphia, has been incorporated in Delaware with capital of \$1,000,000 to manufacture submarine boats. The incorporators are Harold T. Montague, Edward A. Fretz and Reynolds C. Gilke, Philadelphia.

The Diamond Chain Co., North George Street, York, Pa., manufacturer of chains, has acquired about five acres on Center Street for the construction of additions. The proposed new building will be about 50 x 500 ft. and will be arranged for a machine shop and drop forge works. Two four-story buildings will also be erected to be used for automatic machinery. The company is also planning for an addition to its North End plant, to be used for the installation of new forge equipment, consisting of twelve units. This latter extension will be employed for increased production of a patent skid chain for motor trucks.

The Rowe Motor Mfg. Co., Downingtown, Pa., manufacturer of motor trucks, has purchased a 5-acre tract along the Pennsylvania Railroad, Lancaster, Pa., and contemplates the erection of a new plant which is expected to be ready for occupancy March 1. It is said that the Downingtown plant will be moved to the new location. Samuel J. Rowe is president and J. Cameron Matteer secretary.

The Frick Co., West Main Street, Waynesboro, Pa., manufacturer of machinery, agricultural implements, etc., has commenced the erection of a two-story and basement addition, about 60 x 100 ft., to cost about \$10,000, to be used for the manufacture of tractors. A. C. Frick is president.

The Emerson-Brantingham Co., Waynesboro, Pa., manufacturer of traction engines and other machinery, will make extensions and improvements in its foundry to cost about \$12,000. Headquarters of the company are at Rockford, Ill.

The Columbus Chain Co., Lebanon, Pa., manufacturer of chains, is planning for extensions to its plant. The company, with headquarters at Columbus, Ohio, recently consolidated with the McKinnon Chain Co., 252 Amherst Street, Buffalo.

The Gibson-Clark Co., Indiana, Pa., has been incorporated with a capital of \$5,000 to manufacture farm machinery. Lewis G. Clark, Indiana, is the principal incorporator.

The Lycoming Foundry & Machine Co., Oliver and High streets, Williamsport, Pa., specializing in the manufacture of gas and gasoline engines, has completed remodeling the former plant of the United States Machine Co., South Williamsport, recently acquired, and plans for immediate operations on an increased scale. It is said that employment will be given to about 50 additional men at once.

The Conestoga Traction Co., Lancaster, Pa., will make extensions and improvements at its Engleside power plant to cost about \$100,000. Considerable new electrical equipment will be installed.

The Freeland Machinery & Iron Co., Freeland, Pa., recently incorporated, is negotiating for local property for its proposed new works. The former factory of the Salmon Iron Works is being considered. Tonhill Brothers, Scranton, Pa., head the company.

The Grove City Brass & Bronze Co., Grove City, Pa., has been incorporated with a capital of \$25,000 to manufacture bronze and brass specialties. T. A. Sampson, Mercer, Pa., is the principal incorporator.

Baltimore

BALTIMORE, NOV. 19.

Fire, Nov. 17, destroyed the machine shop, boiler house and office building of the F. X. Hooper Co., Glenarm, Md., manufacturer of machines for printing on wood. Considerable machinery was damaged or destroyed.

The Standard Electric & Elevator Co., 118 East Pratt Street, Baltimore, has been incorporated with \$500,000 capital stock to manufacture machinery, engines, electrical appa-

ratus, elevators, etc. The incorporators are Frederick Stark, Francis Tucker, Cyrus A. Yarrington, Carroll B. Roberts, Frank Pfister, Carl H. Mohr, John S. Dehn, Wilson R. Payne and Frederick E. Wurzbacher.

Three additional buildings will be erected by the Bartlett-Hayward Co., Scott and McHenry streets, Baltimore. One will be a one-story plate shop, 50 x 300 ft., at Pratt and Parkin streets, to cost \$15,000; another a one-story frame building, 90 x 153 ft., at Gunpowder and Hamburg streets, to cost \$15,000, and a third, one-story, 18 x 32 ft., at Preston Street and Brentwood Avenue, to cost \$500.

The American Propeller & Mfg. Co., 233 to 249 East Hamburg Street, Baltimore, will build a one-story dry kiln, 16 x 78 ft., at Jackson and Gittings streets, at a cost of \$7,000.

An addition to cost \$500 will be made to the machine shop of the Betts Machine Co., Wilmington, Del., recently acquired by the E. I. DuPont de Nemours Co.

Buffalo

BUFFALO, NOV. 19.

Construction is progressing rapidly on the large plant of the Fore River Shipbuilding Co., at Vulcan and Rosedale avenues and the New York Central Railroad, Buffalo, for the manufacture of turbines for the Government, and is expected to be ready for the installation of machinery in a few weeks. It is stated that 7000 men in three shifts will be employed when the plant is completed.

The Russell Motorcar Co., a Canadian corporation, has purchased a one-story building formerly occupied by the Cyphers Incubator Co., at Dewey Avenue and the New York Central Railroad Belt Line, Buffalo, with a floor area of 100,000 sq. ft., in which it will make munitions. Manufacturing will begin as soon as the machinery can be installed. About 400 men will be employed.

The J. F. Devine Co., manufacturer of vacuum-drying and impregnating apparatus, Buffalo, is building an addition 35 x 200 ft. to its plant at Clinton and Manitoba streets and the Erie Railroad.

The Transmission Ball Bearing Co., Buffalo, has commenced construction of an addition to its plant at Military Road, Kenmore Avenue and the New York Central Railroad.

The Charles B. Viner Co., organ manufacturer, Buffalo, has commenced work on a factory at Niagara and Penfield streets for the manufacture of church organs.

The Globe Pattern Works, Buffalo, is building a second, story to its pattern shops at Norris and Hertel avenues.

The Stewart Motor Co., 9 Randall Street, Buffalo, has had plans prepared for a new two-story machine shop, 30 x 110 ft., on East Delavan Street.

The Gray Machine Tool Co., Buffalo, has been incorporated with a capital of \$50,000 to manufacture machine tools. A. W. Sawyer, P. R. Smith and K. Dayton, all of Buffalo, are the incorporators.

The Strong Steel Foundry Co., 33 Norris Street, Buffalo, specializing in the production of steel castings, is building an addition to its plant.

The Misener & Irving Mfg. Co., Syracuse, N. Y., has been incorporated with a capital of \$50,000 to manufacture tools and other specialties. The incorporators are J. I. Misener, E. V. B. Tyminski and A. Pearsall, all of Syracuse.

Chicago

CHICAGO, NOV. 19.

Buying is almost entirely confined to war requirements, and is proceeding at a rate that is without precedent in this section of the country. The leading purchaser is the Rock Island Arsenal, which in the past week has continued to distribute large orders with an entire absence of red tape or unnecessary delay, with the further gratifying feature that the orders have been well distributed. All the tools are required in the manufacture of 75 mm. gun carriages with recoil mechanism.

The Four Lakes Ordnance Co., Madison, Wis., continues to place orders for machinery for the manufacture of 300 5 in. naval guns. The tools to be purchased will total at least \$325,000. They are to be installed in a plant 150 x 500 ft., which is to be ready for occupancy in 55 days. The company is having made under its own auspices 20 large lathes in addition to the tools to be purchased from other manufacturers.

Reports coming to this market from Detroit indicate that the plant which Dodge Bros. will build for the execution of a huge contract will cost between \$2,000,000 and \$3,000,000.

Machinery men here understand that the contract is for 155 mm. hydro-pneumatic recoil slides. As previously stated, the chief effect of the buying for Detroit delivery, so far as this district is concerned, is to tighten factory deliveries.

The International Harvester Co. has bought a fair-sized list for delivery at its Akron, Ohio, plant, the requirements being miscellaneous.

An indication of the activity of the market lies in the fact that one dealer sold more tools in the first 15 days of this month than in any entire month in its history, and with the war business has enjoyed a fair run of orders from industrial buyers. The greatest demand continues for large machines and their delivery is correspondingly far off. Large turret lathes of one make, for instance, cannot be had until next March, while smaller machines of the same type are available for December delivery. Large planing, boring and drilling machines are impossible to get inside of several months.

The American Shipbuilding Co. has been awarded a contract by the United States Shipping Board for 36 3500-ton vessels, each to cost \$700,000. They are to be delivered in July or August, next, and will be built on the Great Lakes. At its South Chicago plant the company will soon have four additional berths, making six altogether. The boats are to be 261 ft. long, 43 ft. beam.

Plans have been prepared for the \$100,000 one and two-story factory, 400 ft. long, which is to be built for the Harrington & King Perforating Co., Chicago.

The Edwards Cylinder Mfg. Co., Pekin, Ill., has been incorporated with a capital stock of \$10,000 to manufacture pump cylinders. A factory has been obtained, and it is expected that operations will begin early in December. T. N. Smith is secretary and treasurer.

Negotiations have been closed for the removal of the Menominee Electrical Mfg. Co. from Menominee, Mich., to Cairo, Ill. Several sites for the new plant are under consideration.

Contract has been let and ground has been broken for the first building of a group to be erected at Rockford, Ill., for the C. Mattison Machine Co., Beloit, Wis. The first unit will be of concrete, 100 x 400 ft., part two stories. The company manufactures wood-working and other machinery.

Machine tools and equipment valued at over \$1,000,000, formerly the property of the Pullman Motor Car Co., York, Pa., will be sold at auction, beginning Dec. 4, by Samuel L. Winternitz & Co., auctioneers, 506 Rector Building, Chicago. The property comprises about 111 machines, including lathes, milling, grinding and gear cutting machines, turret machinery, motors and miscellaneous tools and supplies.

Milwaukee

MILWAUKEE, Wis., Nov. 19.

The demand for machine-tools from industries executing Government contracts continues in great volume and no slackening is noticeable either in the number or urgency of orders. Requirements of local metal-working industries continue large and no relief is looked for in the near future because of the establishment of new industries. Many new companies have been organized to undertake Government work, but others aim to manufacture implements of peace, notably agricultural tools. Activity in the foundry trade continues at a high ebb and the entrance of several new firms into this field has also been noted. The demand for castings probably has never before been of such large volume. Many manufacturers operating big foundries are finding it necessary to apply to outside shops to take care of the overflow, even though they have increased their capacities.

The Falk Company, Milwaukee, founder and machinist, has awarded a contract to the Worden-Allen Co., Milwaukee, for the erection of a new steel and brick machine shop, 175 x 300 ft. The additional facilities are required for the execution of Government contracts for herring-bone reducing gears for destroyers and other naval purposes. Harold S. Falk is general superintendent.

The United States Gear Shift Co., Eau Claire, Wis., has been incorporated under the laws of Maine with an authorized capital stock of \$405,000, of which \$150,000 is represented by the Wisconsin interest. It will manufacture a hydraulic gear-shifting mechanism for automobiles, trucks, and other vehicles. The officers are: President, N. J. Whelan; vice-president and secretary, L. A. Laursen; treasurer, J. T. Joyce; directors, R. B. Gillette and Edward Hutchens. Ultimately the capital stock will be \$1,500,000, of which \$500,000 will be preferred and the remainder common stock. Temporary manufacturing quarters will be leased immediately pending the erection of a plant on a site just purchased in Eau Claire.

Lippert & Rhenstrom, Kenosha, Wis., metal bed manufacturers, have broken ground for an addition costing about \$25,000 with equipment. The general contract has been awarded to P. J. Eiffler, Kenosha.

Henry J. Pauly, Milwaukee, will build a two-story machine shop, 41 x 48 ft., at 218-220 Fourth Street, costing \$7,500.

The Wisconsin Tractor Co., Sauk City, Wis., has increased its capital stock from \$50,000 to \$100,000 to accommodate its growing business and to take care of local stockholders in the Shaw Motor Co., who financed the erection of the machine shop and foundry occupied by the tractor works. Upon the completion of the buildings the Shaw company was unable to make arrangements to transfer its works to Sauk City and later the group was taken over by McFarland & Westmont, Lodi, Wis., who organized the Wisconsin Tractor Co. to conduct their tractor manufacturing business.

The Arneson Foundry Co., 319 Exchange Street, Kenosha, Wis., is taking bids through White, White & White, architects, for the erection of a one-story steel, brick and concrete addition, 70 x 125 ft., costing \$50,000 with complete equipment.

The C. A. Lawton Co., DePere, Wis., manufacturer of gasoline engines, sustained an estimated loss of \$10,000 by fire which almost totally destroyed its main pattern shop. Rebuilding will begin immediately.

Lawrence College, Appleton, Wis., will soon be in the market for two or three large boilers for its central heating plant. Dr. Samuel Plantz is president.

The Northern Foundry Co., organized by Milwaukee and Racine, Wis., capital, has decided upon Marinette, Wis., as the location of its permanent plant and headquarters. It has leased the foundry and pattern shop of the former Marinette Iron Works and expects to be producing castings by Dec. 1. The product will be utilized for the most part by the J. I. Case Threshing Machine Co., Racine, Wis., manufacturer of farm machinery, automobiles, etc. James M. Fitzpatrick is president and S. D. Drew, general superintendent.

The Liberty Foundry Co., Milwaukee, has been incorporated with a capital stock of \$30,000 by Walter J. Buckley, Gerhard W. Mockly and Edward G. Mockly, to manufacture castings and patterns.

The Racine Boat Co., Racine, Wis., and the Simmons Boat Co., Chicago, have been consolidated under the control of the Simmons interests. O. M. Godske retires as vice-president of the Racine company and is succeeded by Ned Simmons, who will have charge of the design and construction of both yards. Fred W. Herman remains as president of the Racine company. The Chicago yard will continue to build craft from 50 ft. upward and the Racine yard will specialize in smaller boats up to 50 ft. in length.

The Lawson Aircraft Corporation, Green Bay, Wis., on Nov. 15 took occupancy of its new manufacturing plant, erected especially for the manufacturing of airplanes. The main shop is of reinforced concrete, 75 x 150 ft., two and three stories. The present temporary quarters will be continued in operation as an auxiliary shop. Alfred W. Lawson is general manager of the company.

The Trenam Tractor Co., 403 Cedar Street, Milwaukee, recently organized to manufacture tractors, is negotiating with business men's associations in Stevens Point and other central Wisconsin cities with a view of selecting a permanent location for its proposed new plant. John J. Trenam is president and F. M. Schuler, secretary.

The Pan-American Rubber Co., Milwaukee, has purchased a plant in South Milwaukee for the manufacture of a general line of commercial and automobile rubber goods. Equipment is being installed. Joseph T. Huebner is general manager.

The Appleton Hay Tool Co., Appleton, Wis., will either build a number of additions to its present plant or construct an entirely new group in order to handle its orders for car movers. Bookings from France, Great Britain and domestic sources are so large that the company is behind on its contracts. Plans for enlargements are being made.

Mayer Bros., Inc., Antigo, Wis., manufacturer of power hammers, is completing patterns for several larger types of hammers, production of which will be undertaken after Jan. 1. Up to this time the maximum has been a 100-lb. hammer. Many orders have been received for hammers up to 250 lb. which will be executed next year.

The Menasha Wire & Mfg. Co., Menasha, Wis., is taking bids through Edwin A. Wettengill, architect, Appleton, Wis., for the erection of a new plant to cost \$35,000. It manufactures brass screens and other paper and pulp mill devices. John Graf, head of the Star Pointer Pump Mfg. Co., Menasha, is president.

The Globe Shipbuilding Co., Superior, Wis., is adding an area of 400 x 1500 ft. to its yards and will install three electric traveling cranes.

The J. & B. Mfg. Co., Milwaukee, Wis., manufacturer of electrical fittings, has changed its name to the A. H. Petersen Mfg. Co. A substantial expansion of the company's manufacturing facilities will take place soon.

Cleveland

CLEVELAND, Nov. 19.

The demand for machinery for war industries, largely for shell, motor truck and gun work, continues very heavy. Dodge Bros., Detroit, who have a contract for recoil mechanisms for guns, are inquiring for a large amount of equipment, although no definite list has been issued. The F. B. Stearns Co., Cleveland, is inquiring for about 25 machines for airplane motor work, including lathes and drilling, milling, grinding and profiling machines. The American Brake Shoe & Foundry Co. has a new inquiry out for a round lot of lathes for its Erie, Pa., plant for work on 6-in. shells. A local manufacturer has an order for 50 turret lathes for the Worthington Pump & Machinery Corporation, Hazelton, Pa., and 32 turret lathes for the Rock Island Arsenal, in addition to round lot orders from the same sources recently noted, and has a large number of other inquiries. This company reports that its October domestic sales broke all records, its volume of business only being exceeded in one month when it received an unusually heavy volume of export orders.

The Glenn L. Martin Co., Guardian Building, Cleveland, recently organized by men prominent in the iron, steel and metal-working industry to manufacture airplanes, will shortly equip an experimental building and plans to erect a plant in the next few months. The company will devote its attention largely to fighting machines for the Government. It is in the market for wood-working machinery and machine shop and tool room equipment for its experimental plant, and shortly will buy equipment for its permanent works.

The C. & M. Fence & Galvanizing Co., Cleveland, has been incorporated with a capital stock of \$35,000 by Ralph J. Crane, Thomas A. Crane, and others.

The Cleveland Gear Grinding Co., Cleveland, has been incorporated with a capital stock of \$350,000 by Roy N. Hall, M. E. Noyes, and others.

The Iler Foundry & Mfg. Co., Cleveland, has been incorporated with a capital stock of \$30,000 by F. M. Iler, and others, to take over the business of the Iler Co., manufacturer of brass and melting furnaces, ore pulverizers, blowers and other equipment. An addition, 30 x 50 ft., is being erected.

The Lewis Foundry Co., Toledo, Ohio, has been reincorporated under the name of the Lewis Steel Products Co. It operates a foundry and machine shop at 4080 Detroit Avenue and manufactures gas and gasoline valves. Two new factory buildings were added recently.

The Owen Tire & Rubber Co., Bedford, Ohio, is having plans prepared for a fireproof factory. W. C. Owen & Co., Cleveland, are the architects.

The Engel Aircraft Co., Niles, Ohio, has awarded a contract to the Hunkin-Conkey Construction Co., Cleveland, for an addition to its plant.

A three-story addition will be built shortly to the plant of the Knight Tire Co., Canton, Ohio, now a part of the Republic Rubber Co.

The Zanesville Malleable Co., Zanesville, Ohio, is enlarging its plant by the erection of an addition, 50 x 150 ft., and has acquired an adjoining site for further extensions.

The Ashland Brass Foundry Co., Ashland, Ohio, recently organized by James and Waldo Kuffman, is building a plant for the manufacture of brass and aluminum castings.

Cincinnati

CINCINNATI, Nov. 19.

Inquiries for machine tools continue on the increase, practically all being from firms making war munitions. Dodge Bros., Detroit, have issued a list requesting prices on 250 milling machines. This firm has lately bought heavily of lathes, planers and boring mills. Dayton companies are also placing orders for different types of machines. Export business is largely confined to machine tools needed by the Government for repair shops in France, although quite a number of portable electric drilling machines have lately gone forward to Spain and Italy. There does not seem to be as much new demand for shaping machines, but all local companies are very busy. The demand for electric generators and motors is also declining, and the releasing of a small percentage of labor from these plants has been of benefit to a few companies who are short-handed.

Jobbing foundries making a specialty of small castings are not as busy as they were three months ago, but foundries

making machine tool castings have all the work they can take care of.

The United States Machine Tool Co., Cincinnati, has acquired the plant and business of the American Milling Machine Co., Ludlow, Ky., and will continue the manufacture of No. 1½ milling machines in the Ludlow plant. The executive offices of the first named company are at 1950 West Sixth Street, Cincinnati. Henry F. Smith is president.

Carpenter & Weldon, Pickering Building, Cincinnati, refrigerating engineers and contractors, are remodeling the plant of the Crystal Ice Co., Beaumont, Tex. Nearly all the extra equipment has been purchased, with the exception of some small electric motors.

It is reported, but not yet officially confirmed, that the J. A. Fay & Egan Co., Cincinnati, has definitely decided to remove its plant to Bond Hill suburb. The company purchased a building site three years ago, but was held up in its plans by the lack of street car service for its workmen, which has now been remedied by the extension of a city car line.

The plant of the Hamilton Foundry & Machine Co., Hamilton, Ohio, was recently slightly damaged by fire. No delay in operation was experienced.

The Premier Rubber & Insulation Co., Dayton, Ohio, has been incorporated with \$100,000 capital stock by Henry M. Granzow and others. No announcement has been made as to manufacturing plans.

The Dayton-Wright Airplane Co., Dayton, Ohio, has purchased the plant of the Darling Motor Co. Additions will be built and machinery installed for the manufacture of airplane parts. This factory was formerly operated by Orville Wright in the manufacture of airplanes on a small scale.

The Hardware Specialties Mfg. Co., Springfield, Ohio, has been incorporated with \$10,000 capital stock by J. B. Gaines and others.

The Jeffrey Mfg. Co., Columbus, Ohio, is constructing a temporary manufacturing building at 241 East First Street.

The Banner Pattern Co., Columbus, Ohio, has been incorporated with \$10,000 capital stock by James Crooks, Edward Schmid and others.

The Thomas & Armstrong Co., London, Ohio, has decided to erect a new plant that will more than double its present output of sheet metal specialties.

The L. W. Carroll Machine Co., Batavia, Ohio, has removed its shop from the Kreckeler Building to more commodious quarters near the Norfolk & Western depot. It manufactures a patented clutch pulley.

The Central South

LOUISVILLE, Nov. 19.

Inquiries for machines are fewer in number but are as good as orders where reasonably quick deliveries can be made. There is no nibbling for prospects and a good volume of business is being handled. Motors are in good demand. Labor continues scarce.

The Roy C. Whayne Supply Co., Louisville, is in the market for a 25-hp., double-drum electric hoist, 220-volt, three-phase, 60-cycle, with swinger, and for a 7½-hp., three-phase, 25-cycle, 220 or 440-volt motor.

Grainger & Co., Tenth and Rowan streets, Louisville, are in the market for a 5-ton electric traveling crane with about 36-ft. span.

The Farmers' Co-Operative Associations of Kentucky, Lexington, Ky., propose to establish a factory to cost \$500,000 to manufacture farm equipment and supplies. John H. Humphreys, College of Agriculture, University of Kentucky, Lexington, may be addressed.

The John G. Duncan Co., Knoxville, Tenn., is in the market for an 8, 10 or 12-hp. double cylinder, double-drum hoisting engine, without boiler.

The G. W. Simmons Co., Memphis, Tenn., is in the market for a steam driven air compressor, capacity 300 to 400 cu. ft. per min. at 100 lb., to run at variable speed, controlled by a pressure governor.

Indianapolis

INDIANAPOLIS, Nov. 19.

The Muncie Cap & Set Screw Co., Muncie, Ind., has increased its capital stock from \$20,000 to \$50,000.

The Protective Electrical Supply Co., Fort Wayne, Ind., has increased its capital stock from \$25,000 to \$200,000.

The T. W. Warner Co., Muncie, Ind., manufacturer of automobile parts, has increased its capital stock from \$100,000 to \$2,000,000.

The Newtown Electric Light Co., Newtown, Ind., has been

incorporated with \$10,000 capital stock to generate electric light and power. The directors are James R. Campbell, Thomas Schultz and George F. Chamberlain.

The Printers' Machinery Co. has been incorporated at Kokomo, Ind., with \$25,000 capital stock to manufacture binding machines. The directors are Reuben Hawkins, Harrison D. Wilcutts, Harry M. Lynch, M. E. Louth and James C. Patten.

The Stutz Motor Car Co., Indianapolis, is building a one story brick and steel addition to its plant, 92 x 182 ft., for the manufacture of four-cylinder automobile motors. It is expected to be in operation by Jan. 1.

St. Louis

ST. LOUIS, NOV. 19.

The Tehula Gin Co., Tehula, Miss., is in the market for about \$10,000 worth of equipment for its plant.

The Mitchell Round Bale Co., Marietta, Okla., is in the market for equipment to replace about \$20,000 worth of machinery destroyed by fire.

The Mitchell Ginning Co., Oklahoma City, Okla., is in the market for about \$50,000 worth of equipment to replace machinery destroyed in a recent fire.

The Empire District Electric Co., Joplin, Mo., will install equipment at a cost of about \$275,000 to increase its capacity to 55,000 kw.

Wheeler & Rogers, Sumner, Miss., will erect a machine shop at Tutwiler, Miss., and are in the market for equipment.

The N. O. Nelson Mfg. Co., St. Louis, manufacturer of plumbing supplies, will increase its capital from \$1,500,000 to \$2,500,000 to enlarge its capacity and add new equipment.

The Marianna Motor Car Co., Marianna, Ark., capital \$50,000, is in the market for equipment for a repair plant and machine shop. H. Banks is president.

The Jahncke Shipbuilding Co., Madisonville, La., Ernest Lee Jahncke, New Orleans, president, will equip a plant at Madisonville to build steel steamships. It has a Government contract.

The Mitchell Ginning Co.'s gin at Sapulpa, Okla., with offices at Oklahoma City, Okla., has been burned with a loss of \$50,000 on machinery.

The Williams Mill Mfg. Co., Texarkana, Ark., is in the market for boring machines, particularly drill presses, etc.

The Ingalls Iron Works, Birmingham, Ala., recently incorporated with a capital of \$250,000, will operate a machine shop and foundry. R. I. Ingalls is president and A. L. Gilliland, treasurer.

Texas

AUSTIN, NOV. 17.

Industrial activities are unusually brisk throughout this section. Machinery dealers state that more orders have been received for heavy machines within the last three weeks than at any time for several years. Conditions in Mexico do not improve, and there has been a temporary cessation of buying for that country.

The Uvalde Electric Light Co., Uvalde, will enlarge its plant and provide power for pumping water from shallow wells for irrigation purposes.

The Acme Iron & Metal Co., Dallas, has been incorporated with a capital stock of \$15,000. Sam Weinberg is a stockholder.

It is announced that the Dallas Power & Light Co., Dallas, will make improvements to its property at a cost of approximately \$2,500,000, which will involve the expenditure of about \$750,000 within the next few months. Additional machinery will be installed in the power plant.

It is stated that the Missouri, Kansas & Texas Railroad will build an ice and cold storage plant at San Antonio at a cost of \$100,000.

The San Marcos Utilities Co., San Marcos, will make improvements to its electric light and waterworks plant at a cost of \$20,000.

The Snowflake & Taylor Light & Power Co., Snowflake, Ariz., is being organized with a capital stock of \$50,000. A. Z. Palmer of Taylor, Ariz., and John A. Freeman, Snowflake, are among the stockholders.

The Sinclair Gulf Pipe Line Co., which has its principal office at Portland, Me., has been granted a Texas charter with headquarters at Houston. It has a capital stock of \$3,500,000 and will lay a pipe line from the Oklahoma fields to the site of its proposed refinery at Houston, at a cost of about \$5,000,000, including the installation of pumping plants.

The Canadian Water, Light & Power Co., Canadian, will

install a new engine and other equipment in its waterworks and electric light plant.

The United Verde Copper Co. will install steam shovels and other equipment at its mines at Jerome, Ariz. Charles Clark is general manager.

The City Council, Victoria, will soon begin the construction of a new municipal electric light and power plant at a cost of \$40,000.

California

SAN FRANCISCO, NOV. 13.

The demand for machine tools, especially the largest type, continues very strong. One prominent supply company, claiming two weeks ago to have the largest stock of tools on the coast, says that to-day its stock is so low that the question of replenishment has become a serious problem. Within two weeks it has sold between \$50,000 and \$75,000 worth of tools, bringing its record of sales beyond that of any year since 1906. The demand is especially for automatic machinery, large lathes, planers and radial drills. Cranes have also been unusually active. For smaller machines the call is normal. The inability of Eastern manufacturers to fill orders for machinery is causing a good deal of dissatisfaction, and unless conditions improve it is said the Government may find itself with a lot of hulls on its hands without machinery or equipment. The freight situation is also unsatisfactory. Machinery people realize the strain that is being put upon the railroads, but say it would make conditions much easier if the roads could furnish information regarding the whereabouts of shipments.

The Koppel Sales Co., Inc., San Francisco, reports that business has been unusually active within the past two weeks, especially in supplying narrow gage equipment for industrial plants controlled by the Government at Mare Island, San Diego and other points.

The American Can Co. has purchased for \$85,000 a 15-acre site at Park and Fruitvale avenues, Oakland, on which it will immediately begin the erection of a plant to cost about \$1,000,000.

The Golden Gate Shipbuilding Corporation, San Francisco, has been incorporated with a capital stock of \$1,000,000. The incorporators are C. Bruno Carlson and Victor O. Post, Oakland; A. G. Kazebeer, A. C. McNamara, Thomas W. Firby and Herman Virde, San Francisco, and J. E. Pemberton, Berkeley.

The Michaelsen Machinery Co., Reno, Nev., has been incorporated with a capital of \$2,000,000 by Edwin M. Ferguson, Emanuel Cohen and Wilbur D. Shaw.

The California Wire Cloth Co., Oakland, is adding machinery for the manufacture of fine-drawn copper and brass wire. A battery of annealing furnaces and machinery for manufacturing fence wire are also to be added.

The Marchant Calculating Machine Co., Emeryville, has added 16,000 ft. of floor space to its factory and will install machinery to increase its capacity to 1000 machines per month.

The Valley Foundry & Machine Works, Fresno, will erect an addition to its shops at a cost of \$3,000.

The Goldy Machine Works, Sunnyvale, has been sold to Joseph Brack, Lodi, who will manufacture a patented motor truck.

The Commandant of the Navy Yard, Mare Island, has called for bids for an extension to the boiler shop, 98 x 93 ft. A 40-ton crane will be installed.

The board of education, Oakland, has called for bids for bench lathes and other tools for the Oakland technical high school.

The National Engineering Co., Wilmington, Los Angeles, will build a one-story addition, 40 x 75 ft., to its machine shop. Plans have been filed.

The World Aircraft & Development Co., Los Angeles, has been incorporated with a capital of \$1,000,000 to manufacture aircraft and is negotiating for a site for its proposed plant, which will specialize in the production of high speed machines. A branch plant at San Diego is also contemplated. Floyd Smith and Fred C. Stillwell, Los Angeles, are the incorporators.

The Master Carburetor Co., Los Angeles, recently organized, has secured the patent rights to manufacture Master carburetors and will equip a plant. C. G. Harness is president and general manager.

The Los Angeles Railway Corporation, Pacific Electric Building, Los Angeles, will establish a new machine shop on Girard Street.

The Electro-Industrial Tractor Co., Vernon, Los Angeles, has been incorporated with a capital of \$50,000 to manufacture tractors. Richard H. Norton, 335 West Twenty-seventh Street, is the principal incorporator.

The SAVAGE Arms Corporation, San Diego, Cal., has acquired a building on Market and State Streets, which it will equip for a gun manufacturing plant. Considerable machinery has been ordered.

The George W. Eno Rubber Co., Los Angeles, has been incorporated with a capital of \$150,000 to manufacture rubber specialties. George W. and D. M. Eno, John C. Stockwell and A. T. Sackett are the incorporators.

The Los Angeles Shipbuilding & Drydock Co., Los Angeles, will increase the capacity of its plant at Smith's Island, Wilmington, by the addition of two new shipways. It has secured a new contract from the Government for 10 steel ships with a capacity of about 8800 tons each.

The Pacific Northwest

SEATTLE, Nov. 13.

The efforts of the lumber industry of this section are concentrated on the production of ship and aircraft material, of which only comparatively small percentages are obtained from the logs. This results in the accumulation of much lumber of lower grades.

The car shortage, which is already acute on the Southern Pacific lines, it is feared will grow even worse than a year ago. The immense demand by the Government for cars is working extreme hardship on private shippers. Shortage of labor, especially in the logging camps, is becoming more pronounced.

Recent statistics show that in Seattle shipyards there are 42 ways for constructing ocean-going wooden vessels, as compared with a total of five one year ago. For the fiscal year ended June 30, the annual report of the State Corporation Commissioner shows that 15 shipbuilding companies, representing capital stock of \$5,952,000, were organized in Oregon.

The Oceanic Shipbuilding Co., Portland, is completing arrangements for the establishment of a shipbuilding plant at Milwaukie, Ore.

The W. A. Vigiers Iron Works, Astoria, Ore., has changed its name to the Astoria Marine Iron Works. It will be moved to the port dock, to become a part of the new plant to be erected for the manufacture of marine boilers, engines, propelling and other gear.

The Standard Boiler Works, Seattle, has completed plans for its proposed boiler house, 64 x 160 ft., 33 ft. high, to be erected at a cost of \$12,000.

The Erickson Engineering Co., Seattle, has received contracts from the Government for the construction of 10 9,500-ton steel steamships, involving an expenditure of \$20,000,000. C. J. Erickson, president, has secured a 12-acre site on the Duwamish Waterway, and preliminary work is under way for the construction of a plant to cost \$500,000. Besides six ship ways, a boiler shop, plate shed, foundry, machine and blacksmith shops will be built.

The Patterson-McDonald Shipbuilding Co., Seattle, Wash., has received contracts from the Government for the construction of 8 800-ton steel steamships, at a cost of \$24,000,000. The contract is the largest single award ever made in the Northwest and will mean the establishment of another steel shipbuilding plant in Seattle. The company has a shipyard on the Duwamish Waterway, where 10 wooden ships are under construction. Four ways will be added, with two additional ones later. The machine shop and foundry will be enlarged to a length of 440 ft. Every detail of the ships will be constructed in the plant, including machinery, engines, boilers, deck and cabin fittings.

The Thomas Engineering Works, Portland, Ore., has been incorporated for \$100,000 to manufacture a patented drag saw, pneumatic cleaner, riveting machine and pneumatic hammer. A factory will be established. Edwin E. Thomas is president and H. G. Beckwith manager.

Canada

TORONTO, Nov. 19.

The Gillette Safety Razor Co. of Canada, Ltd., Montreal, has been incorporated with a capital stock of \$2,000,000 by Arthur A. Hittues, Gordon W. MacDougall, Lawrence MacAffane, and others, to manufacture safety razors, blades, cutlery, etc.

The Laval Industrielle, Ltd., Ville Laval de Montreal has been incorporated with a capital stock of \$99,000 by Joseph O. Dion, Alberic Cote, Emile E. Parent, and others, of Montreal, to manufacture jewelry, sheet metal, clocks, etc.

The Conquest Machine Works, Ltd., Conquest, Sask., has been incorporated with a capital stock of \$30,000 to manufacture machinery, tools, iron and steel, etc.

The Grand Trunk Railway, Lindsay, Ont., will build a roundhouse, machine shop and coal hoists at Lindsay. J. D. McMillan, Belleville, Ont., is manager.

The British Forgings, Ltd., 27 Atlantic Avenue, Toronto, is building a galvanized iron and frame plant to cost \$4,000.

W. K. Colville & Son, 25 Front Street East, Toronto, will build an addition to their blacksmith shop and garage to cost \$5,500. Material and equipment will be purchased by G. D. Redmond, 33 Fairview Boulevard, architect.

Delta, B. C., will build a pump house and install an electric pump to cost \$12,000. N. A. McDiarmid is clerk.

The Hydroelectric Power Commission, Eugenia, Ont., is having plans prepared for extensions to its power plant to cost about \$75,000.

The Dunlop Tire & Rubber Co., Ltd., 244 Booth Avenue, Toronto, will build an addition to its power plant to cost \$5,500.

The factory owned by the Cranbrook Sash & Door Co., Ltd., Cranbrook, B. C., was totally destroyed by fire with a loss of \$40,000. It will be rebuilt and new machinery purchased.

The Volta Mfg. Co., Welland, Ont., is in the market for a radial drill with 4 to 6-ft. swing.

George Hall, Alton, Ont., is in the market for a No. 5 Daisy or Oxford boiler.

The Western Tools, Ltd., Winnipeg, has been incorporated with a capital stock of \$5,000 by L. Holling, A. B. Cail, M. E. Cail, and others, to manufacture tools, machinery, etc.

The Multipower Motor Sales, Ltd., Winnipeg, has been incorporated with a capital stock of \$100,000 by F. L. Malcolm, V. A. Leslie, L. M. Sharn, and others, to manufacture automobiles, motors, engines, accessories, etc.

The forge shop owned by P. Melanson, Moncton, N. B., was destroyed by fire with a loss of \$30,000.

The Canadian Metals, Ltd., 195 Alexander Street, Vancouver, will equip a scrap yard and is in the market for shears, acetylene cutters and a magnet for lifting iron.

Government Purchases

WASHINGTON, Nov. 19.

Bids will be received by the Bureau of Supplies and Accounts, Navy Department, Washington, opening dates unassigned, schedule 1569, for one heavy-duty engine lathe for Brooklyn, N. Y.; schedule 1567 for one horizontal boring and drilling machine for Hingham, Mass.; schedule 1568, for one electrically driven planer and joiner for South Charleston, W. Va.; schedule 1570, for one tool grinder, one radial drill and one 16-in. engine lathe for San Diego, Cal.

Bids will be received until Nov. 19 by the General Engineer Depot, U. S. Army, 1419 F Street Northwest, Washington, under circular 441, for 14 hand-power boring machines. Also bids will be received until Nov. 19 at the office of the Commanding Officer, San Antonio Arsenal, San Antonio, Tex., under circular 233, for one double-cylinder air compressor and one 8 x 42 air receiver.

Bids were received at the Bureau of Supplies and Accounts, Navy Department, Washington, on Nov. 9, 12 and 13 for furnishing material and supplies for the naval service as follows:

Schedule 1862½, Ordnance, Class 1, South Charleston, W. Va.—Three universal boring, drilling and milling machines—Bid 45, item 1a, \$55,740; 1b, \$55,740; 1c, \$55,740; 46, part, \$50,150, on any class of above schedule. Class 2, South Charleston, W. Va.—One open-side planer—No bid. Class 3, South Charleston—Two 6-ft. universal radial drills—Bid 8, \$5,065; 40, \$4,891 and \$4,973; 44, \$5,147; 45, \$4,050; 60, \$4,837. Class 4, South Charleston—One pit planing machine—Bid 45, \$126,920. Class 5, South Charleston—One cutting-off planing machine—No bid. Class 6, South Charleston—One or two universal drilling machines—Bid 45, item 1a, \$32,845; item 1b, \$32,845. Class 7, South Charleston—One or two 10-ft. universal radial drills—Bid 45, item 1a, \$28,910; item 1b, \$28,910. Class 8, South Charleston—One to three platen planers—Bid 45, item 1a, \$78,200; 1b, \$78,200; 1c, \$78,200; 45, item 1a, \$134,155; 1b, \$134,155; 1c, \$134,155. Class 9, South Charleston—One or two grinding machines—Bid 45, item 1a, \$20,435; 1b, \$20,435. Class 10, South Charleston—One post planing machine—Bid 45, \$59,750. Class 11, South Charleston—One or two rotary or circular planing machines—Bid 45, item 1a, \$58,230; 1b, \$58,230.

Names of the bidders and the numbers by which they are designated in the above list follow: Bid 8, Brown & Zortman Machinery Co., 2535 Liberty Avenue, Pittsburgh; 40, Motch & Merryweather Machinery Co., 711 Lakeside Avenue Northwest, Cleveland; 44, Manning, Maxwell & Moore, 119 West Fortieth Street, New York; 45, Niles-Bement Pond Co., 111 Broadway, New York; 60, William K. Stamets, Pittsburgh.

Schedule 2119½, Steam Engineering, Class 61, Portsmouth, N. H.—Two engine lathes, belt-driven—Bid 24, \$2,778.50; 43, \$2,789; 45, \$1,797; 47, \$2,544 and \$2,510; 49, \$2,845; 61, \$3,484 and \$3,717; 70, \$1,818; 82, \$2,929.90. Class 62, Portsmouth—One four-spindle motor-driven drill—

Bid 47, \$592 and \$655. Class 63, Portsmouth—One engine lathe, belt driven—Bid 45, \$810; 61, \$1,512; 70, \$1,030. Class 64, Portsmouth—Two sensitive, three-spindle drills—Bid 43, \$505; 47, \$515; 49, \$507.

Names of bidders and their numbers follow: Bid 24, The Fairbanks Co., 416 Broome Street, New York; 43, Lynd-Farquhar Co., 419 Atlantic Avenue, Boston; 45, the Monarch Machine Tool Co., Sidney, Ohio; 47, Manning, Maxwell & Moore, 119 West Fortieth Street, New York; 49, Niles-Bement-Pond Co., 111 Broadway, New York; 61, Henry Prentiss & Co., New York; 70, the Philip Smith Mfg. Co., Sidney, Ohio; 82, Walcott Lathe Co., Jackson, Mich.

Schedule 1540, Construction and Repair, Class 1, Mare Island—One motor-driven, direct-connected squaring shear—Bid 7, \$3,600; 53, \$3,283.80; 62, \$3,610; 68, \$4,900. Alternative bid—Do. f.o.b. works—Bid 7, \$3,215; 40, \$2,937 and \$2,657; 48, \$3,284; 61, \$5,940; 97, \$3,230, \$3,298, \$3,279 and \$3,309.

Schedule 1546, Ordnance, Class 11, Mare Island—Two duplex milling machines—Bid 62, \$1,625. Alternative bid—Do. f.o.b. works—Bid 62, \$1,550; 80, \$1,565; 97, \$1,562; 81, \$16,647.29, part; 90, \$24,995.04; 98, \$35,219.12.

Names of the bidders and their numbers in the above lists follow: Bid 7, Bertsch & Co., Cambridge City, Md.; 40, Loy & Nawrath Co., 29 Runyon Street, Newark, N. J.; 48, Niagara Machine & Tool Works, 683 Northland Avenue, Buffalo; 53, George A. Ohl & Co., 161 Oraton Street, Newark, N. J.; 61, Sherritt & Stoer Co., 603 Finance Building, Philadelphia; 62, the T. O. Stallman Supply Co., 129 First Street, San Francisco, Cal.; 68, the D. H. Stoll Co., 26 Lansing Street, Buffalo; 80, Van Norman Machine Tool Co., Springfield, Mass.; 81, Ward & Co., 816 Fourteenth Street Northwest, Washington; 90, the Manhattan Supply Co., 115 Franklin Street, New York; 97, Manning, Maxwell & Moore, New York.

NEW TRADE PUBLICATIONS

Ventilating Sets.—B. F. Sturtevant Co., Hyde Park, Boston. Bulletin No. 237. Concerned with a line of ready-to-run portable ventilating sets which consist of an electric motor with one of the builder's multivane type fan wheels mounted on the shaft. A number of views of the sets in use for a great variety of purposes are presented, together with dimension and specification tables.

Ball Bearings.—Standard Roller Bearing Co., Philadelphia. Bulletin No. 52. Calls attention to a line of single and double row annular ball bearings. The construction of the bearings is first mentioned, followed by a brief description of the balls employed and the tolerances to which the bearings are made. Dimension diagrams and tables of the various types of bearings that can be supplied are included.

Saws.—Simonds Mfg. Co., Fitchburg, Mass. Booklet entitled, "Methods of Cutting Metals." Size, 4 x 6 in.; pages, 64. Illustrates and describes the various styles of solid and inserted tooth metal cutting saws. Information on the uses of each saw, the sizes in which they can be supplied, the number of teeth and the speeds and feeds recommended to give satisfactory operation are included. The saws covered included circular, milling, splitting and screw slotting types as well as those that have been especially developed for cutting aluminum, brass, copper, electrotypes, rubber, etc.

Plate Mills.—United Engineering & Foundry Co., Farmers Bank Building, Pittsburgh, Bulletin G. Gives a complete description with illustrations of large plate mills which have been built for the Inland Steel Co. and other plants. All of the various types of mills are illustrated, together with descriptions of the method of rolling both sheared and universal plates. A list of the mills that have been built by the company and those now under construction is included. Mention is made of the facilities possessed by the company for furnishing complete mechanical equipment for the mills, as well as designing the best arrangement of the auxiliary mills.

Industrial Engineering.—W. G. Archer & Associates, 320 Broadway, New York. Pamphlet. Devoted to the subject of profit conservation. Gives a brief discussion of the subjects of cost and general accounting, industrial engineering and factory management and layout. All of these are briefly touched upon and the facilities possessed by the firm for planning new systems or improving existing ones are mentioned.

Screw Machine Products.—National Acme Co., Cleveland. Calendar. Size, 12 x 15½ in. Each of the 12 leaves in addition to giving the calendar for one month beginning with November also has the dates for the previous and the following months. As usual the upper portion of the leaf

contains an illustration of the company's screw machines, the operations performed by them and the accessories employed. In addition to the engravings of the different operations, a number of views of products are included.

Gear Shaping Machines.—Fellows Gear Shaper Co., Springfield, Vt. Booklet. Size, 6 x 9 in.; pages, 136. Devoted to the setting up and operating of the company's spur and helical gear shaping machines. It comprises a group of printed instructions and suggestions supplementing those given by the machine demonstrators together with data on roughing and finishing cuts, care and maintenance, methods of clamping and supporting work, cutting oils and cooling compounds, gaging and inspection of work, rules for calculating the elements of the teeth and tables of gear parts, etc. In preparing the booklet numerous halftone engravings and line drawings have been included to supplement the text.

Portable Tiering Machine.—N. Y. Revolving Portable Elevator Co., 344 Garfield Avenue, Jersey City, N. J. Bulletin No. 42. Illustrates and describes the use of the company's Revolver which is a portable machine for piling cases, bales, barrels, crated machinery, etc. Among the features emphasized are savings of time and labor and utilization of all the floor space as the goods can be packed clear to the ceiling. A number of views of the machine in use for handling various kinds of packages are included, together with lists of the industries using these particular forms of containers.

Boronic-Metal Alloys.—American Boron Products Co., Inc., Reading, Pa. Pamphlet. Points out the advantages of using Boronic-Copper and Boronic-Metal Alloys as deoxidizers. After a brief discussion of what these products are and briefly mentioning the economies to be derived from employing them, the various uses of the products are mentioned. These comprise a series of 23 numbered paragraphs, one for each product with a brief statement of the composition and purposes to which it may be put. Directions for using the various products are included.

Grinding and Polishing Machines.—Gardner Machine Co., Beloit, Wis. Catalog. Size, 6½ x 10 in.; pages, 121. Describes an extensive line of grinding and polishing machinery together with the various accessories and supplies. The machines covered include disk type machines for metal working and pattern shops, polishing and buffing lathes and ring wheel grinding and band finishing machines. As a general thing each machine is given a separate page with an illustration and brief description, and where possible the same arrangement is followed for the different accessories and supplies. A number of views of the machines in use are presented.

Punch Press Safety Devices.—Benjamin Electric Mfg. Co., 120 South Sangamon Street, Chicago. Two circulars. Present illustrations and brief descriptions of two safety devices for punch presses. One of these is a guard which requires the use of both hands to trip the press, while the other is a small air compressor, designed for the rapid ejection of pieces of work, dirt, chips and foreign substances from the dies during the upstroke of the machine.

Vacuum Drying and Impregnating Apparatus.—J. P. Devine Co., Buffalo. Bulletin No. 104. Gives complete detailed information of the equipment that has been developed for impregnating electric coils, cables, insulator pins, electrical work of all kinds and wood. The operation of the unit is described at length and a number of views of installations are included.

Flexible Metal Hose.—Breeze Mfg. Co., 252 South St., Newark, N. J. Mailing card. Relates to a line of flexible metallic hose with interlocking walls. A number of views of the various kinds of hose and fittings that can be furnished supplement the descriptive matter and a table of the standard sizes is given.

Oil Storage Systems.—Gilbert & Barker Mfg. Co., Springfield, Mass. Pamphlet. Deals with systems for storing, handling and distributing volatile, lubricating and painting oils in machine shops, mills, factories, engine rooms and railroad oil houses. The different pumps and tanks are illustrated and briefly described and a number of views showing the way in which the various parts of the system can be installed are included.

Oxy-Acetylene Cutting Equipment.—General Welding & Equipment Co., 107 Massachusetts Avenue, Boston. Pamphlet. Treats of a line of oxy-acetylene cutting equipment for handling extra heavy work. In addition to illustrations and a brief description of the apparatus, a number of views of work that has been done in making cuts ranging from 6 to 18 in. in length, are presented with short statements of the work that was done and the time required to do it. A few suggestions as to the proper method of handling the apparatus for doing this work are offered.

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